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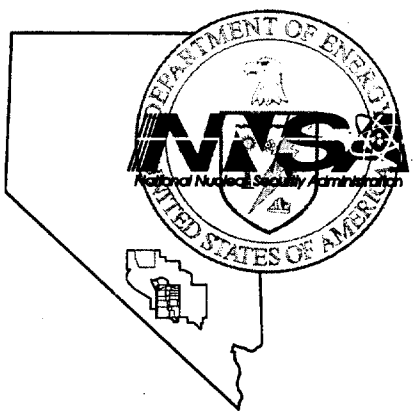

Closure Report for Corrective Action Unit 417: Central Nevada Test Area Surface, Nevada

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Revision: 1

November 2001

Environmental Restoration
Division

U.S. Department of Energy
National Nuclear Security Administration
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SUBMITTAL OF THE FINAL CLOSURE REPORT FOR CORRECTIVE ACTION UNIT 417: CENTRAL NEVADA TEST AREA SURFACE, NEVADA, NOVEMBER 2001

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CLOSURE REPORT
FOR CORRECTIVE ACTION UNIT 417:
CENTRAL NEVADA TEST AREA
SURFACE, NEVADA

Controlled Copy No.:___ UNCONTROLLED

Revision 1

November 2001

Prepared for the U.S. Department of Energy
National Nuclear Security Administration
Nevada Operations Office
under Contract No. DE-AC08-96NV11718

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CLOSURE REPORT FOR CORRECTIVE ACTION UNIT 417: CENTRAL NEVADA TEST AREA SURFACE, NEVADA

Approved by: _____ Date: 10/1/01
Monica L Sanchez, Project Manager
Offsites Project

Approved by: _____ Date: 11/1/01
Runore C. Wycoff, Division Director
Environmental Restoration Division

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ACRONYMS AND ABBREVIATIONS

bgs	below ground surface
BLM	U.S. Bureau of Land Management
BN	Bechtel Nevada
CADD	Corrective Action Decision Document
CAP	Corrective Action Plan
CAS	Corrective Action Site
CAU	Corrective Action Unit
COC	Constituents of Concern
cm	centimeter
CMP	Central Mud Pit (located at UC-1)
CNTA	Central Nevada Test Area
CR	Closure Report
DOE	U.S. Department of Energy
DOE/NV	U.S. Department of Energy, Nevada Operations Office
EPA	U.S. Environmental Protection Agency
ER	Environmental Restoration
FFACO	Federal Facility Agreement and Consent Order
ft	foot / feet
gal	gallon
in	inch

ACRONYMS AND ABBREVIATIONS (continued)

km	kilometer
km^2	square kilometer
L	liter
LGP	Low Ground Pressure
m	meter
m^3	cubic meter
mi	mile
mi^2	square mile
mg/kg	milligram per kilogram
mg/L	milligram per liter
NAC	Nevada Administrative Code
NAD	North American Datum - either 1927 or 1983
NDEP	Nevada Division of Environmental Protection
NNSA	National Nuclear Security Administration
NNSA/NV	National Nuclear Security Administration Nevada Operations Office
NTS	Nevada Test Site
QA	quality assurance
SITA	Sampling, Inspection, Testing, and Acceptance
TDR	time-domain reflectometry
TPH	total petroleum hydrocarbons
TTR	Tonopah Test Range

ACRONYMS AND ABBREVIATIONS (continued)

ug/kg	microgram per kilogram
ug/L	microgram per liter
UTM	Universal Transverse Mercator
yd^3	cubic yard
UST	underground storage tank

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EXECUTIVE SUMMARY

This Closure Report provides the documentation for closure of the Central Nevada Test Area (CNTA) surface Corrective Action Unit (CAU) 417. The CNTA is located in Hot Creek Valley in Nye County, Nevada, approximately 22.5 kilometers (14 miles) west of U.S. State Highway 6 near the Moores Station historical site, and approximately 137 kilometers (85 miles) northeast of Tonopah, Nevada. The CNTA consists of three separate land withdrawal areas commonly referred to as UC-1, UC-3, and UC-4, all of which are accessible to the public. A nuclear device for Project Faultless was detonated approximately 975 meters (3,200 feet) below ground surface on January 19, 1968, in emplacement boring UC-1 (Department of Energy, Nevada Operation Office [DOE/NV], 1997). CAU 417 consists of 34 Corrective Action Sites (CASs).

Site closure was completed using a Nevada Department of Environmental Protection (NDEP) approved Corrective Action Plan (CAP) (DOE/NV, 2000) which was based on the recommendations presented in the NDEP-approved Corrective Action Decision Document (DOE/NV, 1999). Closure of CAU 417 was completed in two phases. Phase I field activities were completed with NDEP concurrence during 1999 as outlined in the Phase I Work Plan, Appendix A of the CAP (DOE/NV, 2000), and as summarized in Section 2.1.2 of this document. The 34 CASs that comprise CAU 417 were closed in the following manner:

- No further action was taken at 13 CASs (17 sites): 58-05-01, 58-07-01, 58-05-04, 58-09-05 (Mud Pits C and D only), 58-35-01, 58-05-02, 58-09-06 (Mud Pits A, B, C and D), 58-10-06, 58-19-01, 58-35-02, 58-44-04, 58-05-04, and 58-09-03 (Mud Pit E only).
- Housekeeping activities, collecting scrap materials, and transporting to approved landfill sites at the Nevada Test Site were used to close seven CASs: 58-44-01, 58-44-02, 58-44-05, 58-98-03, 58-98-01, 58-98-02, and 58-98-04.
- Two small underground storage tanks, CASs 58-05-03 and 58-99-01, were clean closed by excavation and removal during 1998 site characterization support activities.
- Two septic tanks, CASs 58-05-05 and 58-05-06, were clean closed by backfilling with clean fill material during 1998 site characterization support activities.
- Site posting with above-grade monuments, attached warning signs, and use restrictions were used to close seven CASs (nine sites): 58-09-02, 58-09-05 (Mud Pit E only), 58-09-06 (Mud Pit E only), 58-10-01, 58-25-01, 58-09-03 (Mud Pits A, B, and D), and 58-10-05.
- Clean closure by excavation of petroleum hydrocarbon-impacted material with levels greater than the NDEP Action level of 100 milligrams per kilogram and limited regrading was used to close five CASs: 58-10-03, 58-44-06, 58-44-03, 58-10-02, and 58-10-04.

- Construction of two engineered covers was used to close CASs 58-09-01 (UC-1 Central Mud Pit) and 58-09-03 (UC-4 Mud Pit C only) in place. The Central Mud Pit cover was vegetated and instrumented with time-domain reflectometry sensors to monitor soil moisture in the cover. The UC-4 Mud Pit C cover was a non-vegetated cover system that used a geosynthetic clay liner to prevent infiltration from reaching the waste package. Following cover construction, a fence was erected around each cover and warning signs posted to prevent damage or intrusion into the covers.

Because CAU 417 has been closed by following the approved CAP (DOE/NV, 2000) the NNSA requests the CAU 417 be promoted from Appendix III to Appendix VI "Closed Corrective Action Units" of the Federal Facility Agreement and Consent Order (FFACO, 1996).

1.0 INTRODUCTION

This Closure Report (CR) provides documentation for the closure of the Central Nevada Test Area (CNTA) surface, Corrective Action Unit (CAU) 417, in accordance with the Federal Facility Agreement and Consent Order (FFACO) (FFACO, 1996).

The CNTA is located in Hot Creek Valley, Nye County, Nevada, approximately 22.5 kilometers (km) (14 miles [mi]) west of U.S. State Highway 6, approximately 55 km (34 mi) north of Warm Springs, Nevada, and approximately 135 km (85 mi) northeast of Tonopah, Nevada (Figure 1). CNTA consists of three separate land withdrawal areas commonly referred to as UC-1, UC-3, and UC-4 (Figure 2). The central land withdrawal area, UC-1, spans approximately 2.6 square kilometers (km^2) (1 square mile [mi^2]). UC-3 and UC-4 span approximately 3.9 km^2 (1.5 mi^2) each. UC-3 and UC-4 are located roughly 4 km (2.5 mi) south and north of UC-1, respectively.

All three CNTA land withdrawal areas are accessible to the public. The sites were obtained by the Atomic Energy Commission (presently known as the U.S. Department of Energy, National Nuclear Security Administration [NNSA]) from the U.S. Bureau of Land Management (BLM). A nuclear device for Project Faultless was detonated approximately 975 meters (m) (3,200 feet [ft]) below the ground surface (bgs) on January 19, 1968, in emplacement boring UC-1 (Department of Energy, Nevada Operation Office [DOE/NV], 1997). Two other emplacement borings (UC-3 and UC-4) were drilled on this site. These emplacement borings were not used and were subsequently closed in place in 1974 by the U.S. Atomic Energy Commission. Emplacement holes UC-3 and UC-4 are included in the CNTA subsurface CAU 443.

CAU 417 consists of 34 Corrective Action Sites (CASs) (Figure 3) as listed in Appendix III of the FFACO (FFACO, 1996)). CAU 417 was characterized between September 1996 and June 1998 in four separate field investigations. The results of the CAU 417 site investigation show that the only constituents of concern (COC) detected was total petroleum hydrocarbons (TPH) in the diesel/motor oil range whose concentration exceed the Nevada Administrative Code (NAC) Action level of 100 milligrams per kilogram (mg/kg) (NAC, 1996). The results of the site characterization are presented in Appendix D of the Corrective Action Decision Document (CADD) (DOE/NV, 1999). The recommended corrective actions for the 34 CASs are presented in the CADD for CAU 417 (DOE/NV, 1999). The CASs and the corrective actions taken to close these CASs are shown in Table 1.

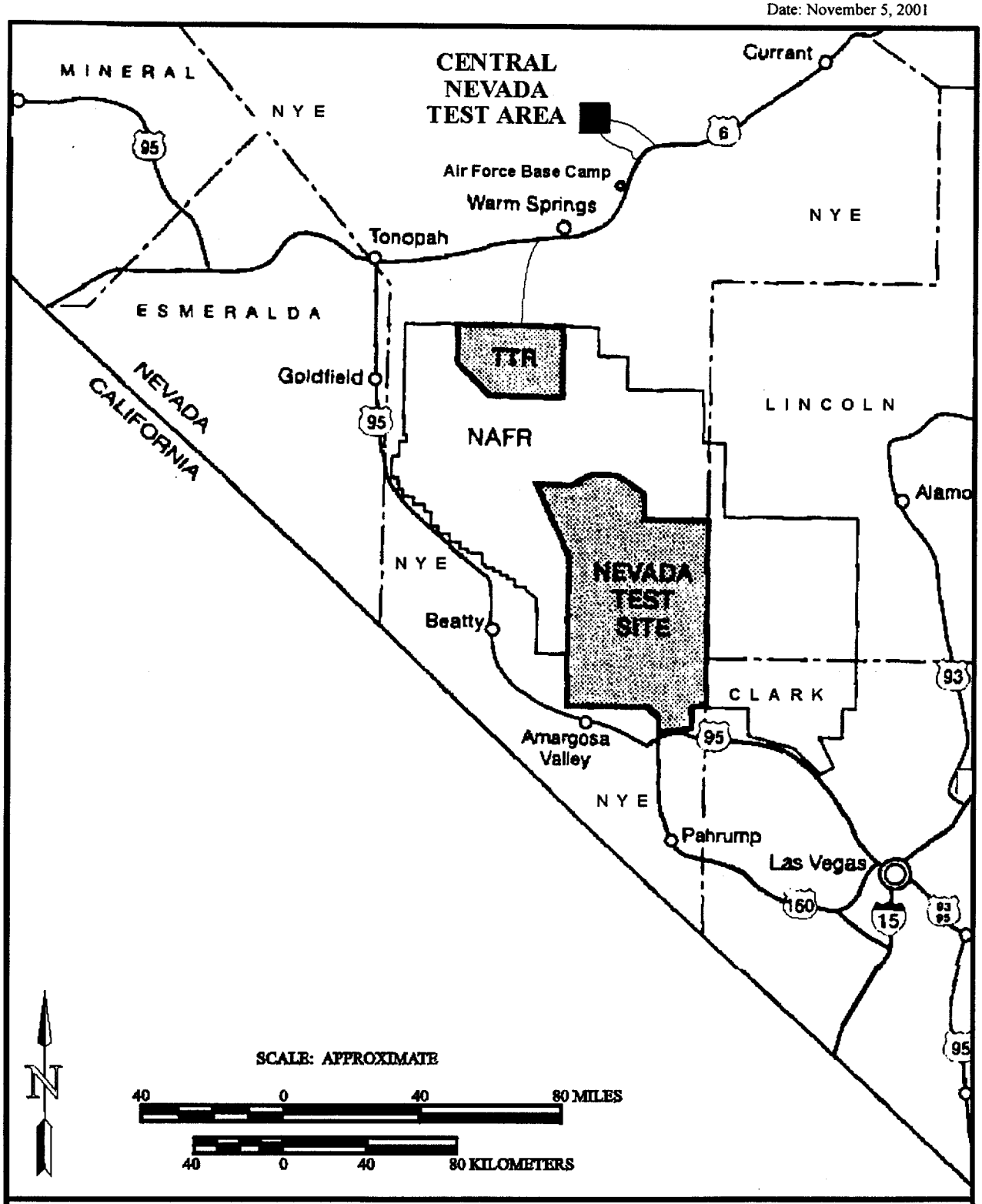

FIGURE 1
CENTRAL NEVADA TEST AREA LOCATION MAP

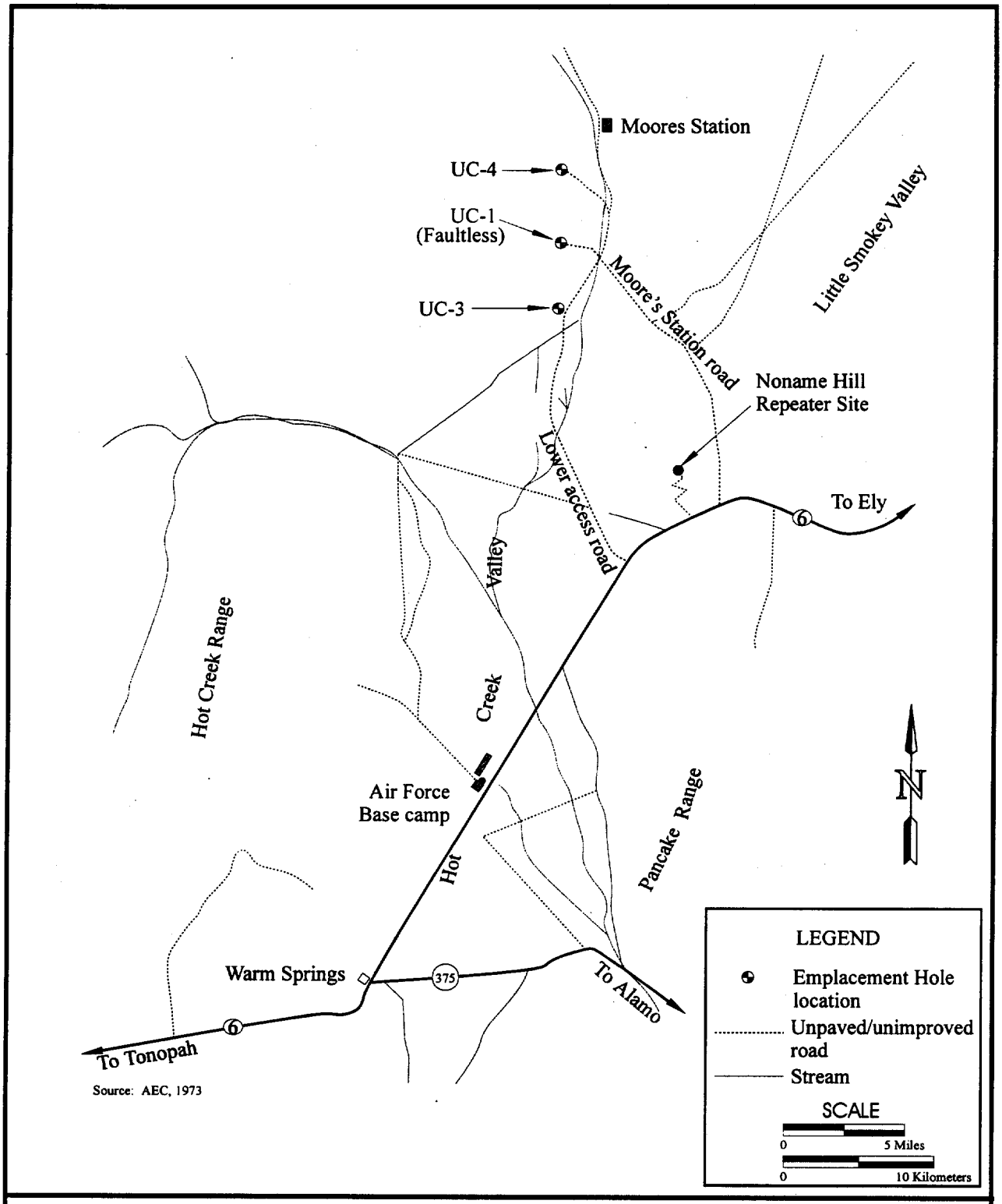

FIGURE 2
CENTRAL NEVADA TEST AREA VICINITY MAP

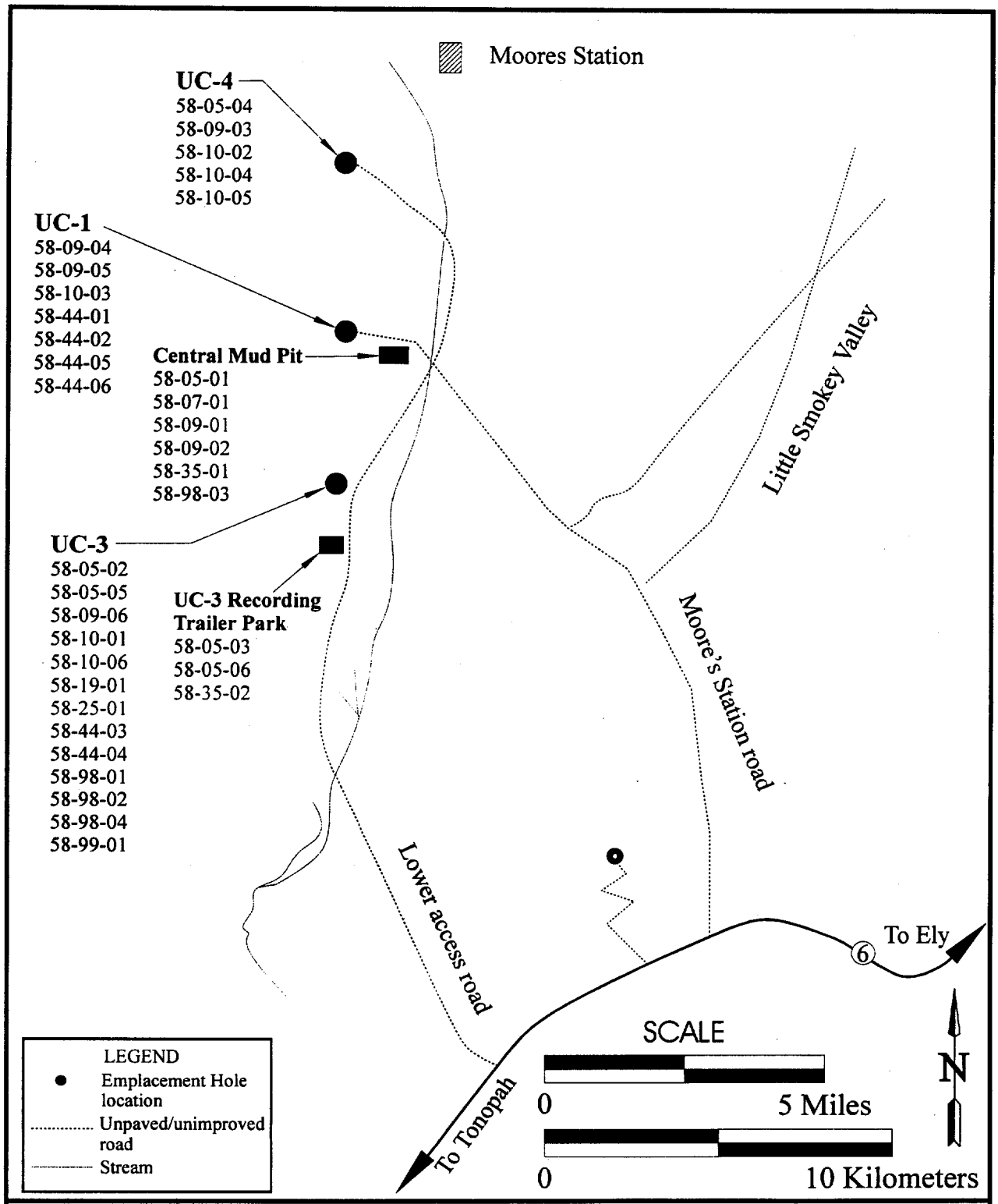

FIGURE 3
CENTAL NEVADA TEST AREA
CORRECTIVE ACTION SITE LOCATIONS

TABLE 1 - SUMMARY OF CLOSURE ACTIVITIES

CORRECTIVE ACTION SITE	CLOSURE ACTIVITY				
	No Further Action	House-Keeping	Site Posting	Excavation w/ Limited Regrading	Engineered Cover
UC-1 Area					
58-05-01 - Septic System	X				
58-07-01 - Decontamination Facility Pit (same as 58-35-01)[a]	X				
58-09-01 - Central Mud Pit (CMP)					X
58-09-02 - Mud Pit U1A			X		
58-09-04 - Mud Pit U1B	X				
58-09-05 - Mud Pit U1C	X				
58-09-05 - Mud Pit U1D	X				
58-09-05 - Mud Pit U1E			X		
58-10-03 - Shaker Pad Area U1S				X	
58-35-01 - Burn Area (same as 58-07-01)[a]	X				
58-44-01 - Drilling Mud/Grout Piles (2) west of the CMP		X			
58-44-02 - Drilling Mud/Grout Piles (2) southeast of UC-1 GZ		X			
58-44-05 - Grout Pile northeast of UC-1 GZ Area U1X		X			
58-44-06 - Drilling Mud/Grout Pile Area U1Y				X	
58-98-03 - Waste Pile east of Mud Pit A		X			
UC-3 Area					
58-05-02 - Septic System	X				
58-05-03 - Recording Trailer Park UST[b]		X			
58-05-05 - Septic Tank southeast of UC-3		X			
58-05-06 - Septic Tank at UC-3 Recording Trailer Park		X			
58-09-06 - Mud Pit U3A	X				
58-09-06 - Mud Pit U3B	X				
58-09-06 - Mud Pit U3C	X				

TABLE 1 - SUMMARY OF CLOSURE ACTIVITIES (Continued)

CORRECTIVE ACTION SITE	CLOSURE ACTIVITY				
	No Further Action	House-Keeping	Site Posting	Excavation w/ Limited Regrading	Engineered Cover
58-09-06 - Mud Pit U3D	X				
58-09-06 - Mud Pit U3E			X		
58-10-01 - Shaker Pad Area U3S			X		
58-10-06 - Drill Mud/Cuttings Area U3X	X				
58-19-01 - Scrap & Trash Dump[c]	X				
58-25-01 - Area E Spill Southern Outlier			X		
58-35-02 - Burn Area	X				
58-44-03 - Drill Mud/Grout Spill Area U3Z				X	
58-44-04 - Drill Mud/Grout Spill Area U3Y	X				
58-98-01 - Waste Pile west of UC-3		X			
58-98-02 - Waste Pile south of UC-3		X			
58-98-04 - Waste Pile southeast of UC-3		X			
58-99-01 - UC3 UST southeast of UC-3		X			
UC-4 Area					
58-05-04 - Septic System	X				
58-09-03 - Mud Pit U4A			X		
58-09-03 - Mud Pit U4B			X		
58-09-03 - Mud Pit U4C					X
58-09-03 - Mud Pit U4D			X		
58-09-03 - Mud Pit U4E	X				
58-10-02 - Shaker Pad Area U4S				X	
58-10-04 - Shaker Pad Area U4W				X	
58-10-05 - Shaker Pad Area U4X			X		
Not Assigned - Scrap & Trash Dump east of UC-4		X			

[a] The decontamination facility pit and "burn area" were originally identified as two separate sites. However, it was later determined that what was thought to be the burned material was actually part of the asphalt-covered decon pit liner.
[b] Underground Storage Tank
[c] As stated in the NDEP-approved CADD (DOE/NV, 1999), this CAS was never located in the field and therefore was not closed by housekeeping activities.

1.1 PURPOSE

The purpose of this document is to:

- Document the closure activities as proposed in the Corrective Action Plan (CAP) for CAU 417 (DOE/NV, 2000).
- Obtain a Notice of Completion from the NDEP.
- Recommend the movement of CAU 417 from Appendix III to Appendix IV of the FFACO.

1.2 SCOPE

The following closure activities were implemented for CAU 417:

- No further action was taken at CASs: 58-05-01, 58-07-01, 58-09-04, 58-09-05 (Mud Pits C and D), 58-35-01, 58-05-02, 58-09-06 (Mud Pits A, B, C, and D), 58-10-06, 58-19-01, 58-35-02, 58-44-04, 58-05-04, and 58-09-03 (Mud Pit E only).
- Housekeeping activities, including removal of used oil filters, aerosol cans, drums, iron scrap and piping, and grout/mud piles at CAS 58-44-01, 58-44-02, 58-44-05, 58-98-03, 58-98-01, 58-98-02, and 58-98-04.
- Two small underground storage tanks (USTs), CASs 58-05-03 and 58-99-01, were clean closed by housekeeping activities that included excavation and backfilling with clean fill material during 1998 site characterization support activities.
- Two septic tanks, CAS 58-05-05 and 58-05-06, were clean closed by removing the tank contents (58-05-05 only), and backfilling with clean fill material during 1998 site characterization support activities.
- Site posting, using concrete monuments with attached warning signs, and establishing use restrictions to prohibit intrusive activities for CAS 58-09-02, 58-09-05 (Mud Pit E only), 58-09-06 (Mud Pit E only), 58-10-01, 58-25-01, 58-09-03 (Mud Pits A, B, and D) and 58-10-05.
- Clean closure of CASs 58-10-03, 58-44-06, 58-44-03, 58-10-02, and 58-10-04 by excavating and relocating material with TPH levels above the NDEP Action level of 100 mg/kg to the UC-1 Central Mud Pit (CMP) or UC-1 CMP mud relocation trench. Following excavation, each CAS was re-graded to its approximate original ground surface contours. To encourage the establishment of native vegetation, the surface of each CAS was scarified to a depth of 0.3 m (1 ft) bgs.

- Constructing an engineered cover system over CAS 58-09-01 (UC-1 CMP) and CAS 58-09-03 (UC-4 Mud Pit C only). Storm water diversion channels and transplanting vegetation were incorporated into the UC-1 CMP cover construction. Time-domain reflectometry (TDR) monitoring and data collection instrumentation was installed in the UC-1 CMP cover to monitor cover soil moisture content.

- Scrap metal unearthed during excavation and recovered during general site housekeeping activities was transported to the Nevada Test Site (NTS) for reclamation or disposal. All sanitary trash and debris was disposed of in the Tonopah Test Range (TTR) sanitary landfill. Approximately 45.4 metric tons (50 tons) of scrap metal and approximately 26.5 cubic meters (m^3) (34.7 cubic yards [yd^3]) of sanitary trash were transported off-site for disposal.

1.3 CLOSURE REPORT CONTENTS

This document is divided into the following sections.

- Section 1.0 - Introduction (purpose, scope, contents)
- Section 2.0 - Closure Activities (description, deviations, schedule, site plan)
- Section 3.0 - Waste Disposition (wastes encountered and their appropriate disposal)
- Section 4.0 - Closure Verification Results (laboratory analysis)
- Section 5.0 - Post-Closure Monitoring Plan
- Section 6.0 - Summary and Recommendations
- Section 7.0 - References
- Appendix A - Verification Sampling Analytical Results
- Appendix B - Project Photographs
- Appendix C - As-Built Engineering Drawings and Design Change Notices
- Appendix D - Sectored Housekeeping Site Closure Verification Documentation
- Appendix E - UC-3 Underground Storage Tank and Septic Tank Closure Documentation
- Appendix F - Use Restriction Documentation
- Appendix G - Sampling, Inspection, Testing, and Acceptance (SITA) Approval Matrix/ Checklist
- Appendix H - Post-Closure Inspection Checklists
- Appendix I - NDEP Document Review Sheet

The following appendices that are listed in the FFACO-approved Closure Report (CR) outline are not included in this CR:

- Closure Certification - Not applicable
- Waste Disposition Documentation - Not applicable

This report was developed using information and guidance from the following documents:

- Nevada Environmental Restoration Project, Health and Safety Plan, Revision 3, DOE/NV, 1998.
- Corrective Action Decision Document for Corrective Action Unit 417: Central Nevada Test Area Surface, Nevada, Revision 1, DOE/NV–524, DOE/NV, 1999.
- Corrective Action Plan for Corrective Action Unit 417: Central Nevada Test Area Surface, Nevada, Revision 0, DOE/NV–588, DOE/NV, 2000.

Construction of the UC-1 CMP cover was controlled by the construction drawings and quality assurance (QA) requirements developed in the Construction Quality Assurance Plan, Appendix E of the CAP (DOE/NV, 2000). The closure of the other CASs that comprise CAU 417 was controlled by QA requirements identified in the CAP (DOE/NV, 2000). All QA requirements identified in the CAP (DOE/NV, 2000) were met.

For the five CASs closed by excavation and removal of hydrocarbon impacted material (Section 2.1.6), no formal data quality objectives were developed. A number of representative soil verification samples were collected from the excavated areas and analyzed to assure clean closure of these sites. All QA requirements identified in the CAP (DOE/NV, 2000) for closure of these CASs were met. In addition, standard laboratory quality assurance/quality control checks were made during sample analysis by the contract laboratory. Results of these checks are included with the sample analytical results in Appendix A of this document.

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2.0 CLOSURE ACTIVITIES

This section of the CR details the specific corrective action activities implemented and completed during the closure of CAU 417. This section also provides a detailed schedule of site activities as completed. Photographs showing representative activities during site closure are included in Appendix B of this document.

2.1 DESCRIPTION OF CORRECTIVE ACTION ACTIVITIES

The closure of CAU 417 occurred in two phases of field activity. Phase I activities were completed in October 1999 and are described in detail in Appendix B of the NDEP-approved CAP (DOE/NV, 2000). Section 2.1.2 of this document also gives a brief summary of the Phase I field activities. The Phase II field activities detailed in the CAU 417 CAP (DOE/NV, 2000), began in July 2000 and were completed in April 2001, with the majority of activities completed by October 2000. The Phase II field activities are detailed below in Section 2.1.3. In addition, eight CASs (Section 2.1.4) were closed as housekeeping sites in June 1998 during the site characterization field investigation by International Technology Corporation.

Note: For purposes of discussion, CAS closures will be grouped and discussed by closure activity, rather than geographic location.

2.1.1 Preplanning and Site Preparation

Planning documents prepared prior to beginning CAU 417 closure field activities include the CAP (DOE/NV, 2000), Field Management Plan (Bechtel Nevada [BN], 2000a), Site Specific Health and Safety Plan (BN, 2000b), a construction work package, a National Environmental Policy Act Checklist, a State of Nevada Class II Air Quality Operating Permit, Surface Area Disturbance Permit, a DOE/NV Real Estate/Operations Permit, BN Hot Work Permit, and a BN Excavation Permit. A project readiness review meeting was held on May 23, 2000, and a pre-job briefing was held in June 2000.

2.1.2 Summary of Phase I - 1999 Field Activities

With NDEP approval, Phase I field activities were completed at CNTA between June 30 and October 15, 1999. Appendix B of the NDEP-approved CAP (DOE/NV, 2000) provides a detailed discussion of the 1999 Phase I CNTA field accomplishments. As-built drawings for the Phase I work are included in Appendix C of this document (Drawings T1 - C9). Phase I field activities included the following:

- Installation of a submersible pump in the HTH-2 supply well south of UC-1. The well supplied the water used in soil conditioning for construction work.

- Construction of two sumps close to the supply well to hold construction water and a pipeline from the well to the sumps.

- Upgrade and repair of site access and haul roads by limited grading.

- Construction of the UC-4 Mud Pit C cover to prove the cover design and construction methods. Figure 4 gives a schematic cross section of the UC-4 Mud Pit C cover as constructed. Cover construction activities included:
  - Construction of a mud relocation trench at the east end of Mud Pit C.
  - Excavation and relocation of drilling mud from UC-4 Area S, CAS 58-10-03, to the relocation trench.
  - Installation of geogrid material directly over the mud pit and relocation trench.
  - Placement of a 0.6-m (2-ft) stabilization layer of clean and petroleum hydrocarbon-impacted material (from UC-1 Area S, UC-3 Area Z, and UC-4 Area W) directly on the geogrid.
  - Placement of a 0.6-m (2-ft) shaping layer of clean fill over the stabilization layer.
  - Placement of a 15.2-centimeter (cm) (6-inch [in]) bedding layer of clean fill over the shaping layer.
  - Installation of a geosynthetic clay liner on the bedding layer.
  - Placement of a 15.2-cm (6-in) buffer layer over the geosynthetic clay liner.
  - Placement of a 0.3-m (1-ft) erosion control layer over the buffer layer.
  - Installation of a cover fence, warning signs, and subsidence monuments.

- Excavation of the UC-1 CMP mud relocation trench. All excavated material was used in the UC-4 Mud Pit C cover construction.

- Installation of concrete above-grade monuments and warning signs at seven CASs (nine sites). Installation of temporary warning signs only at an additional six CASs (seven sites).

In addition, settlement monitoring of the two subsidence monuments and three elevation hubs placed by BN survey crew on the UC-4 Mud Pit C was done. Elevation data were collected monthly for the first seven months following completion of the UC-4 Mud Pit C cover. The data show settlement values in agreement with expected calculated values. (See Section 2.1.1.3 of Appendix A of the CAP [DOE/NV, 2000]). Table 2 shows the data collected through June 1, 2000. Settlement monitoring will be discussed in more detail in the Post-Closure Monitoring Report to be prepared in 2002. An as-built drawing showing the location of the three additional survey hubs will be included in the 2002 Monitoring report.

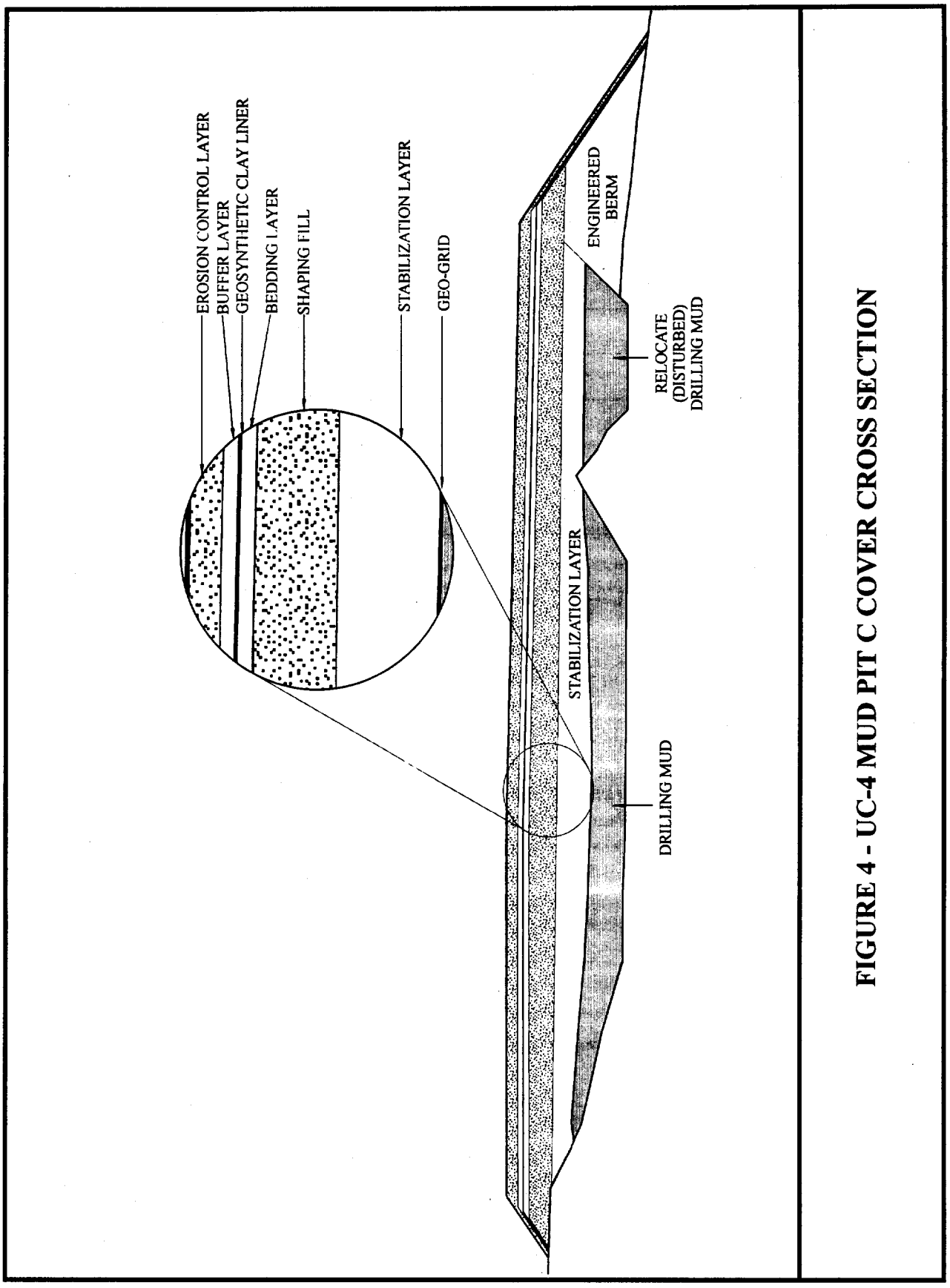


FIGURE 4 - UC-4 MUD PIT C COVER CROSS SECTION

TABLE 2 - SUMMARY OF UC-4 MUD PIT C COVER ELEVATION SURVEY DATA

Survey Date	SURVEY LOCATION / ELEVATION[a] (meters)				
	West Monument	East Monument	North Hub	Center Hub	South Hub
10/12/1999	1999.269	1999.062	_[b]	_[b]	_[b]
11/29/1999	1999.260	1999.065	_[b]	_[b]	_[b]
01/14/2000	1999.254	1999.052	1999.018	1999.082	1999.063
02/28/2000	1999.251	1999.053	1999.019	1999.084	1999.065
03/28/2000	1999.247	1999.052	1999.016	1999.082	1999.064
04/27/2000	1999.242	1999.050	1999.013	1999.079	1999.062
06/01/2000	1999.241	1999.050	1999.013	1999.079	1999.062

[a]The 1929 National Geodetic Vertical Datum is used as the elevation datum.
[b]The North, Center, and South hubs were installed on January 14, 2000 by BN Survey crew.
Monument locations are shown on Drawing C8, Appendix C.
Hub locations will be shown in the first Post-Closure Monitoring Report for CAU 417.

2.1.3 Closure of CASs by No Further Action

Seventeen sites in thirteen CASs (Table 1) were closed by no further action. Analytical results for characterization samples collected from these sites (Appendix D of CADD [DOE/NV, 1999]) showed no COC present at levels greater than preliminary action levels established in the Corrective Action Investigation Plan (DOE/NV, 1997). Therefore, these 16 sites are considered clean and no further corrective action is required, or was performed.

In addition, as stated in Table 2.1 of the NDEP-approved CADD (DOE/NV, 1999), one site, CAS 58-19-01, originally identified as a housekeeping site located at the UC-3 Recording Trailer Park, was not located in the field. No further action was taken to close this CAS.

2.1.4 Closure of CASs by Housekeeping Activities

Table 1-1 of the CADD (DOE/NV, 1999) identifies nine CASs as housekeeping sites. Four of these identified CASs (58-98-01, 58-98-02, 58-98-03, 58-98-04) were closed by housekeeping activities during 1998 site characterization activities. Three of these identified CASs (58-44-01, 58-44-02, 58-44-05) were closed by housekeeping activities during 2000 field work. One identified housekeeping site, CAS 58-19-01, as noted in Table 2-1 of the CADD

(DOE/NV, 1999) was not located in the field and no further action was taken to close it. Also, housekeeping site UC-1 Area Y, CAS 58-44-06, was clean closed by excavation (Section 2.1.6.2). In addition, four CASs, two USTs (58-05-03 and 58-99-01), and two septic tanks (58-05-06 and 58-05-06) were closed by housekeeping activities during 1998 site characterization activities. The following CASs were closed by implementing the indicated housekeeping activity:

CAS No.	Description of CAS
58-44-01	Drilling mud/grout piles west of UC-1 CMP; material used in CMP cover.
58-44-02	Drilling mud/grout piles southeast of UC-1; material used in CMP cover.
58-44-05	Grout pile northeast of UC-1; material used in CMP cover.
58-98-03	Waste pile (drums, filters, etc.) southwest of UC-1 CMP; metal sent to the NTS Salvage as scrap metal, remainder disposed of at the U10c Landfill at the NTS (closed in 1998).
58-05-03	Small UST (three interconnected 55-gallon [gal] drums) located at the UC-3 recording trailer park; contents removed, solidified, tank removed and area over excavated, verification samples collected and submitted for analysis. All wastes disposed of at the NTS Area 6 Hydrocarbon Landfill (closed in 1998).
58-05-05	Septic tank southeast of UC-3; the tank was sampled, the contents removed by pumping, and then backfilled with clean fill (closed in 1998).
58-05-06	Septic tank at the UC-3 Recording Trailer Park; the tank was sampled and backfilled with clean fill (closed in 1998). No contents were removed as the tank was empty.
58-98-01	Waste pile (drums, filters, etc.) west of UC-3; metal sent to NTS Salvage as scrap metal, trash disposed of at the NTS U10c Landfill (closed in 1998).
58-98-02	Waste pile (drums, filters, etc.) south of UC-3; metal sent to NTS Salvage as scrap, trash disposed of at the NTS U10c Landfill (closed in 1998).
58-98-04	Waste pile (metal, cable, etc.) southeast of UC-3; metal sent to NTS Salvage as scrap metal, trash disposed of at the NTS U10c Landfill (closed in 1998).
58-99-01	Small UST (four interconnected 55-gal drums) located southeast of UC-3; contents removed, solidified, tank removed and area over excavated, verification samples collected and submitted for analysis. All wastes disposed of at the NTS Area 6 Hydrocarbon Landfill (closed in 1998).

Copies of the Sectored Housekeeping Site Closure Verification Form for each CAS closed by housekeeping activities are included in Appendix D.

2.1.4.1 USTs and Septic Tanks Closed by Housekeeping Activities

During June 1998, four CASs consisting of two USTs and two septic tanks located at UC-3 and the UC-3 Recording Trailer Park were closed. The USTs (CAS 58-05-03, and 58-99-01) were closed by removing and solidifying the tank contents, excavating and removing the tanks

(55-gal drums), over excavation of any stained soil beneath the tanks, and backfilling the excavations with clean fill. Verification soil samples were collected from beneath the removed UST and from the pit sidewalls from each of the UST excavations and submitted for laboratory analysis. No samples had COC levels greater than preliminary action levels established in the CAIP (DOE/NV, 1997) indicating that the USTs were clean closed. All waste, drums, and stained soils, were transported to the NTS and disposed of in the Area 6 Hydrocarbon Landfill. Notification of closure of the two USTs was transmitted from the National Nuclear Security Administration, Nevada Operations Office (NNSA/NV) to NDEP in December 1998 (personal communication, 1998). Attachment K of Appendix D of the CADD (DOE/NV, 1999) gives the analytical results for the verification samples collected (U3U101, U3U102, U3U103, U3U104, U3U105, U3U201, U3U202, U3U203, U3U204, and U3U205). Copies of the Sectored Housekeeping Site Closure Verification Form for each the closed USTs are included in Appendix D.

The septic tanks (CAS 58-05-05, and 58-05-06) were closed by collecting characterization samples from within the tanks, removing the tank contents (58-05-05 only), transporting the contents to a licensed disposal facility, and backfilling the tanks with clean fill. The clean fill was obtained from a borrow area just inside the old UC-3 fenced area. (The fence has been removed.) Approximately 7,570 liters (2,000 gal) of sludge was pumped from the UC-3 septic tank (CAS 58-05-05) and hauled to a licensed disposal facility by a licensed contractor from Tonopah, Nevada. Attachment K of Appendix D of the CADD (DOE/NV, 1999) gives the analytical results for the verification samples collected (CNTA5001, CNTA5002, CNTA5003, and CNTA 5015). Copies of the Sectored Housekeeping Site Closure Verification Form for each the closed septic tanks are included in Appendix D.

Copies of the letters from the state of Nevada to the NNSA/NV acknowledging the closure of the two USTs (CAS 58-05-03, and 58-99-01) and the two septic tanks (CAS 58-05-05, and 58-05-06) are included in Appendix E.

2.1.5 Closure of CASs by Site Posting

The CADD (DOE/NV, 1999) identified ten sites (seven CASs) to be closed by site posting and implementing land-use restrictions. Site posting consisted of placing above-grade monuments to mark the perimeter of each site. Each monument is cast concrete and has a 0.6 by 0.6-m (2 by 2-ft) square base, is 0.9 m (3 ft) tall, and pyramidal in shape. Each monument was set in a shallow excavation 0.3 m (1 ft) bgs, backfilled with native soil, and extends approximately 0.6 m (2 ft) above the ground surface. Signs warning of the presence of buried petroleum-impacted soil along with contact information were attached to each monument. A brass survey marker stamped with the coordinates of the monument (Universal Transverse Mercator [UTM], North American Datum [NAD] 1927) was set in the top center of each monument using sulfaset cement.

During 2000 field activities, it was determined that a more appropriate method of closure for CAS 58-44-06, UC-1 Area Y, was by clean closure by excavation (see Section 2.2) rather than by site posting as stated in the CADD (DOE/NV, 1999). Four concrete monuments placed in 1999 were removed and were reused to post CAS 58-10-05, UC-4 Area X. New survey data were generated for the reused monuments and is presented on drawing C4 in Appendix C.

The following sites were closed by posting with above-grade monuments and warning signs during 2000 field activities.

CAS Number	Description
58-09-02	UC-1 Mud Pit A - 4 monuments
58-09-05	UC-1 Mud Pit E - 4 monuments
58-09-06	UC-3 Mud Pit E - 4 monuments
58-10-01	UC-3 Shaker Pad Area S - 4 monuments
58-25-01	UC-3 Area E Spill Southern Outlier - 8 monuments
58-09-03	UC-4 Mud Pit A - 4 monuments
58-09-03	UC-4 Mud Pit B - 4 monuments
58-09-03	UC-4 Mud Pit D - 4 monuments
58-10-05	UC-4 Area X - 4 monuments

Use restriction forms for the seven CASs (nine sites) are contained in Appendix F. Limits of the restricted area boundaries are shown on Drawings C2, C3, and C4 in Appendix C.

2.1.6 Closure of CASs by Excavation and Relocation of Petroleum-Impacted Material

The CADD (DOE/NV, 1999) identified four CASs to be clean closed by excavation and disposal of petroleum hydrocarbon-impacted material in the UC-1 CMP cover system (Table 1). These sites had petroleum hydrocarbon levels in soil/mud that exceeded the NDEP action level of 100 mg/kg. In addition to the four CASs identified in the CADD (DOE/NV, 1999), a fifth site, UC-1 Area Y (CAS 58-44-06), was clean closed by excavation (see Section 2.1.6.2). Clean closure was considered a preferable closure option to posting for this site because the levels of TPH in the soil were low (197 mg/kg maximum value, Appendix D of CADD [DOE/NV, 1999]), the volume of impacted soil was small, and the potential impact to site vegetation was minimal.

2.1.6.1 Closure of UC-1 Area S - CAS 58-10-03

A total of approximately 1,177 m^3 (1,540 yd^3) of petroleum hydrocarbon-impacted soil was excavated from UC-1 Area S, CAS 58-10-03, and transported to and used in the UC-1 CMP cover construction. On July 31 and August 1, 2000, approximately 1,102 m^3 (1,440 yd^3) of material was excavated from an area measuring approximately 45.5 by 40 m (150 by 130 ft) and extending to 0.6 m (2 ft) bgs. Five soil verification samples were collected from the bottom of

the excavation on August 1, 2000 (Figure 5) and submitted for TPH analysis to an off-site contract laboratory. Four of the samples had TPH levels below the NDEP action level for petroleum hydrocarbons (100 mg/kg). Sample UC1SV1 had a TPH value of 170 mg/kg, which was greater than the NDEP action level (100 mg/kg). As a result, on August 7, 2000, an additional 76.5 m^3 (100 yd^3) of soil was excavated from an area centered on the location of sample UC1SV1, measuring approximately 12.5 by 12.5 m (41 by 41 ft) to a depth of 0.46 m (1.5 ft) bgs. The excavated soil was used in the construction of the CMP cover. A sixth soil verification sample, UC1SV6, was collected on August 8, 2000, from the bottom of this over-excavated area and submitted for TPH analysis. TPH results for sample UC1SV6 were less than the NDEP action level for petroleum hydrocarbons (100 mg/kg). Analytical results for the verification samples are provided in Table 3 and discussed in Section 4.1.1. Based upon the results of sample UC1SV6, it was determined that additional removal of material from UC-1 Area S was not required (see Drawing C25, Appendix C).

All material removed from UC-1 Area S was excavated using a front-end loader and transported to the CMP using dump trucks. After verification sampling indicated that clean closure was achieved, the area was graded to restore natural drainage patterns and scarified to a depth of approximately 0.3 m (1 ft) bgs to encourage the establishment of native plant species. A water master was used to control dust generated during excavation and grading. Final site grading was completed on August 18, 2000.

2.1.6.2 Closure of UC-1 Area Y - CAS 58-44-06

A total of approximately 84 m^3 (110 yd^3) of petroleum hydrocarbon-impacted soil was excavated from UC-1 Area Y, CAS 58-44-06, and transported to the UC-1 CMP. On August 25, 2000, approximately 38 m^3 (50 yd^3) of material was excavated from a 9 by 9 m (30 by 30 ft) area, to a depth of 0.5 m (1.6 ft) bgs. Two soil verification samples were collected from the bottom of the excavation (Figure 6), and submitted for TPH analysis to a contract laboratory. Sample UC1YV2 had a TPH value of 107 mg/kg, slightly greater than the NDEP action level for petroleum hydrocarbons (100 mg/kg). As a result, on August 31, 2000, an additional 46 m^3 (60 yd^3) of soil was excavated from an area centered on the location of sample UC1YV2, and measuring approximately 12 by 12 m (40 by 40 ft) to a depth of 0.3 m (1 ft) bgs. A third soil verification sample, UC1YV3, was collected from the bottom of this over-excavated area and submitted for TPH analysis. Results for UC1YV3 were less than the NDEP action level for petroleum hydrocarbons. Analytical results for these samples are discussed in Section 4.1.1 (Table 3). Based upon the results of sample UC1YV3, it was determined that additional removal of material from UC-1 Area Y was not required (see Drawing C37, Appendix C).

All soil removed from UC-1 Area Y was excavated using a front-end loader and transported to the CMP using dump trucks. After verification sampling indicated that clean closure was achieved, the area was graded to restore natural drainage patterns and scarified to a depth of approximately 0.3 m (1 ft) bgs to encourage the establishment of native plant species. A water master was used to control dust generated during excavation and grading. Final site grading was completed on September 12, 2000.

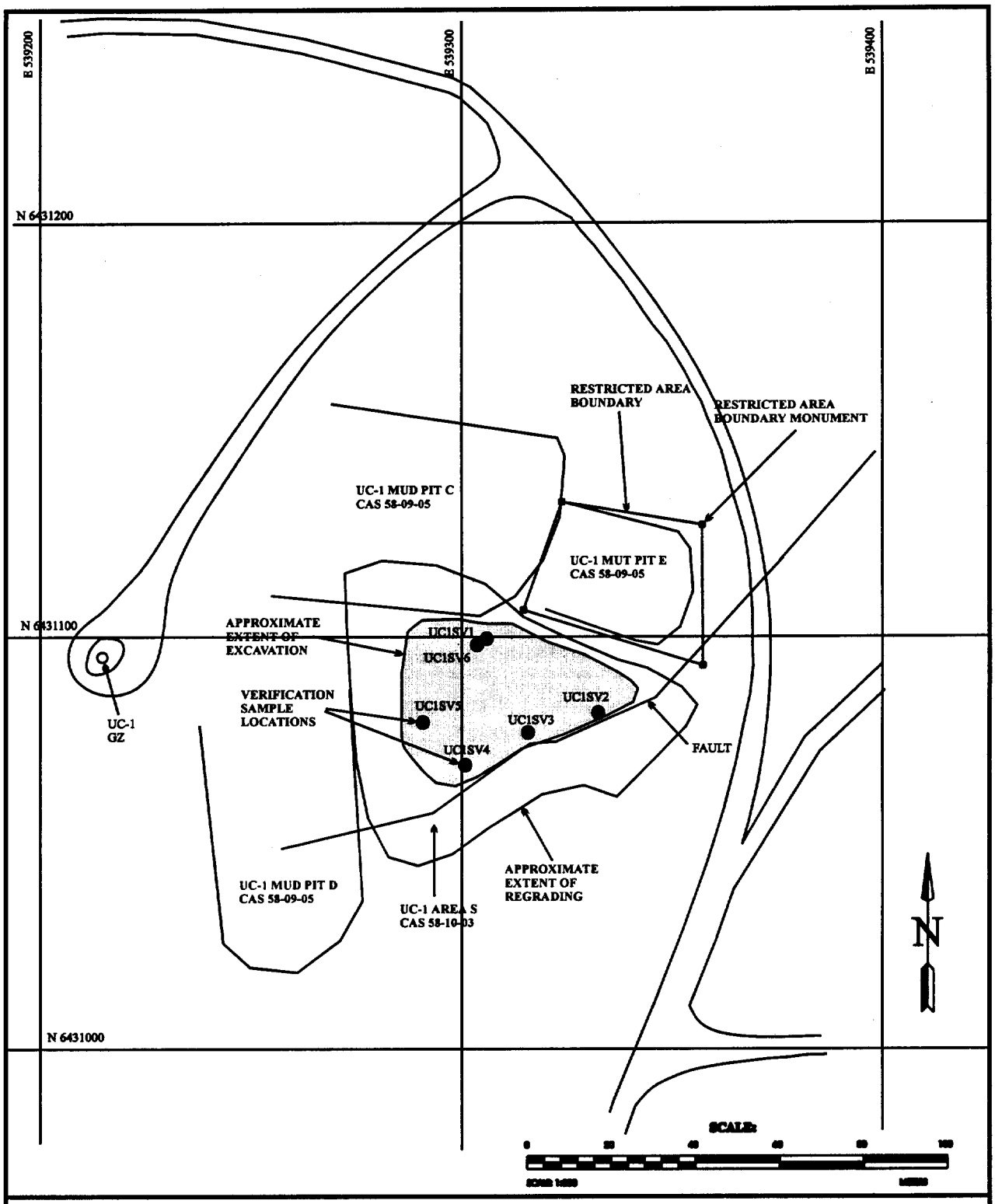


FIGURE 5 - UC-1 AREA S VERIFICATION SAMPLE LOCATIONS

TABLE 3 - SUMMARY OF ANALYTICAL RESULTS FOR TPH IN VERIFICATION SAMPLES

SAMPLE IDENTIFICATION	SAMPLE DATE	GASOLINE C8-C12 (mg/kg)	DIESEL C12-C22 (mg/kg)	OIL C12-C34 (mg/kg)	TOTAL TPH (mg/kg)
UC-1 Area S, CAS 58-10-03					
UC1SV1*	08/01/2000	N/A	170	N/A	170
UC1SV2*	08/01/2000	N/A	41	N/A	41
UC1SV3*	08/01/2000	N/A	62	N/A	62
UC1SV4*	08/01/2000	N/A	20	N/A	20
UC1SV5*	08/01/2000	N/A	24	N/A	24
UC1SV6*	08/09/2000	N/A	<20	N/A	<20
UC-1 Area Y, CAS 58-44-06					
UC1YV1	08/25/2000	<10	39	<50	39
UC1YV2	08/25/2000	38	<10	69	107
UC1YV3*	08/31/2000	N/A	<20	N/A	<20
UC-3 Area Z, CAS 58-44-03					
UC3ZV1*	08/03/2000	N/A	<20	N/A	<20
UC3ZV2*	08/03/2000	N/A	<20	N/A	<20
UC3ZV3*	08/03/2000	N/A	<20	N/A	<20
UC3ZV4*	08/03/2000	N/A	<20	N/A	<20
UC3ZV5*	08/03/2000	N/A	<20	N/A	<20

TABLE 3 - SUMMARY OF ANALYTICAL RESULTS FOR TPH IN VERIFICATION SAMPLES (Continued)

SAMPLE IDENTIFICATION	SAMPLE DATE	GASOLINE C8-C12 (mg/kg)	DIESEL C12-C22 (mg/kg)	OIL C12-C34 (mg/kg)	TOTAL TPH (mg/kg)
UC3ZV6*	08/03/2000	N/A	<20	N/A	<20
UC-4 Area S, CAS 58-10-02					
UC4SV1	08/16/2000	<10	<10	<50	<10
UC4SV2	08/16/2000	<10	31	<50	31
UC4SV3	08/16/2000	<10	<10	<50	<10
UC4SV4	08/16/2000	<10	<10	<50	<10
UC4SV5	08/16/2000	<10	<10	<50	<10
UC4SV6	08/22/2000	<10	<10	80	80
UC4SV7	08/22/2000	<10	<10	<50	<10
UC4SV8	08/22/2000	<10	<10	<50	<10
UC4SV9	08/22/2000	<10	40	86	126
UC4SV10	08/22/2000	<10	<10	<50	<10
UC4SV11	08/22/2000	<10	<10	64	64
UC4SV12	08/22/2000	<10	22	140	162
UC4SV13	08/22/2000	<10	<10	<50	<10
UC4SV14	08/22/2000	22	43	140	205
UC4SV15	08/22/2000	<10	<10	<50	<10

TABLE 3 - SUMMARY OF ANALYTICAL RESULTS FOR TPH IN VERIFICATION SAMPLES (Continued)

SAMPLE IDENTIFICATION	SAMPLE DATE	GASOLINE C8-C12 (mg/kg)	DIESEL C12-C22 (mg/kg)	OIL C12-C34 (mg/kg)	TOTAL TPH (mg/kg)
UC4SV16	08/28/2000	N/A	<20	N/A	N/A
UC4SV17	08/28/2000	N/A	<20	N/A	N/A
UC4SV18	08/28/2000	N/A	<20	N/A	N/A
UC-4 Area W, CAS 58-10-04					
UC4WV1*	08/04/2000	N/A	<20	N/A	<20
UC4WV2*	08/04/2000	N/A	38	N/A	38
UC4WV3*	08/04/2000	N/A	32	N/A	32
UC4WV4*	08/04/2000	N/A	<20	N/A	<20
UC4WV5*	08/04/2000	N/A	20	N/A	20
UC4WV6*	08/04/2000	N/A	<20	N/A	<20

Notes:
See Appendix A for the data reports for all verification samples.
* Sample analyzed for TPH in Diesel Range Organics (C10 to C28) only. Reporting (Detection) Limit is 20 mg/kg.
The NDEP action level for TPH is 100 mg/kg.
All verification samples were collected from the bottom of the indicated excavated areas (except for samples UC4SV1 -5, see section 4.1.1)
"<" indicates that the result was less than the reporting limit. For example, "<10" means the result was less than the reporting limit of 10 mg/kg.
TPH analysis method was EPA Method SW8015M (EPA, 1996).
Analytical results for blank and ms/msd quality assurance/quality control samples are not shown.
mg/kg - milligram per kilogram
N/A - Not Applicable
TPH - Total petroleum hydrocarbons

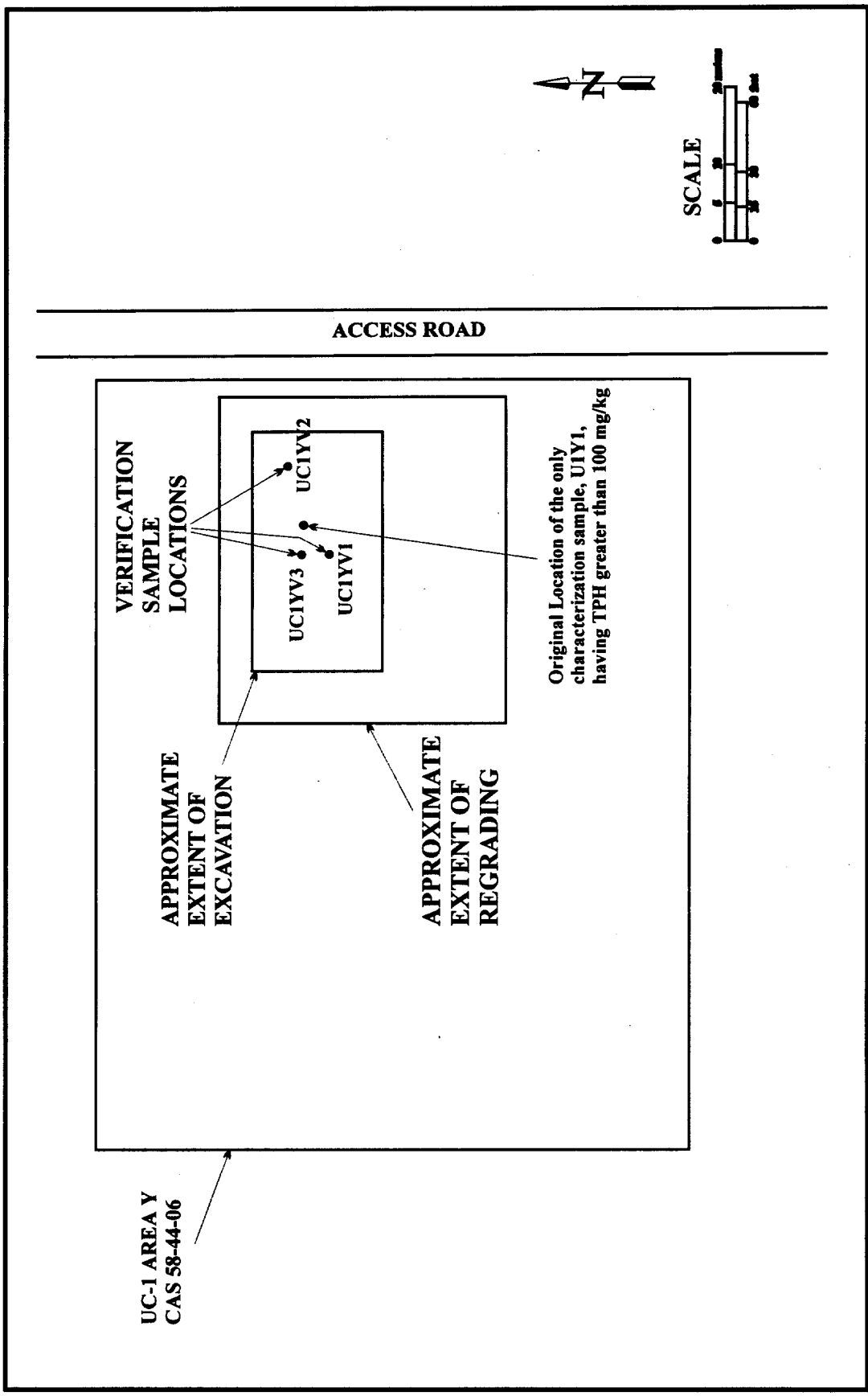


FIGURE 6 - UC-1 AREA Y VERIFICATION SAMPLE LOCATIONS

2.1.6.3 Closure of UC-3 Area Z - CAS 58-44-03

Between July 31 and August 3, 2000, a total of approximately 1,622 m^3 (2,120 yd^3) of hydrocarbon-impacted soil was excavated from UC-3 Area Z, transported to the UC-1 CMP, and incorporated into the CMP cover. An area measuring approximately 52 by 52 m (170 by 170 ft) was excavated to an approximate depth of 0.6 m (2 ft) bgs. Six soil verification samples (UC3ZV1 through UC3ZV6) were collected from the bottom of the excavated area (Figure 7), and were submitted for TPH analysis to a contract laboratory. TPH levels for all six samples were below the NDEP action level for petroleum hydrocarbons (100 mg/kg). Sample analytical results are provided in Table 3 and discussed in Section 4.1.1. Based upon the verification sample results, it was determined that additional removal of material from UC-3 Area Z was not required (see Drawing C26, Appendix C).

All soil removed from UC-3 Area Z was excavated using a front-end loader and transported to the CMP using dump trucks. After verification sampling indicated that clean closure was achieved, the area was graded to restore natural drainage patterns and scarified to a depth of approximately 0.3 m (1 ft) bgs to encourage the establishment of native plant species. A water master was used to control dust generated during excavation and grading. Final grading was completed on August 17, 2000.

2.1.6.4 Closure of UC-4 Area S - CAS 58-10-02

Between August 2 and 22, 2000 approximately 5,872 m^3 (7,680 yd^3) of hydrocarbon-impacted drilling mud was excavated from UC-4 Area S and relocated to the UC-1 mud relocation trench. The material was excavated using two front-end loaders and transported to UC-1 using dump trucks. UC-4 Area S spans a small east-west trending drainage located north of the UC-4 emplacement hole. Area S has an upper area at the west end of the drainage, and a lower area at the east end of the drainage adjacent to the dirt access road. The upper west excavation measured approximately 25 by 70 m (82 by 230 ft) and extended to approximately 2.4 m (8 ft) bgs. The majority of material removed was on the south side of the drainage. The lower excavation measured approximately 30 by 30 m (98 by 98 ft) and extended to a depth of 1.83 m (6 ft) bgs. The drainage area joining the upper and lower areas was not excavated because no waste material was identified as being present during the characterization study (Appendix D of the CADD, [DOE/NV, 1999]).

During the 1999 Phase I field activities, approximately 138 m^3 (180 yd^3) of drilling mud material was excavated from the lower eastern portion of Area S and used in the UC-4 Mud Pit C cover construction (see Appendix B of CAP [DOE/NV, 2000]). At this time, it was discovered that the upper west portion of Area S consisted primarily of drilling mud material, and not granular soil material as originally thought. To clean close the area, drilling mud was excavated from both the upper western, and lower eastern portions of the CAS. A total of 18 verification samples were collected on three different dates from the site and submitted for TPH analysis. Analytical

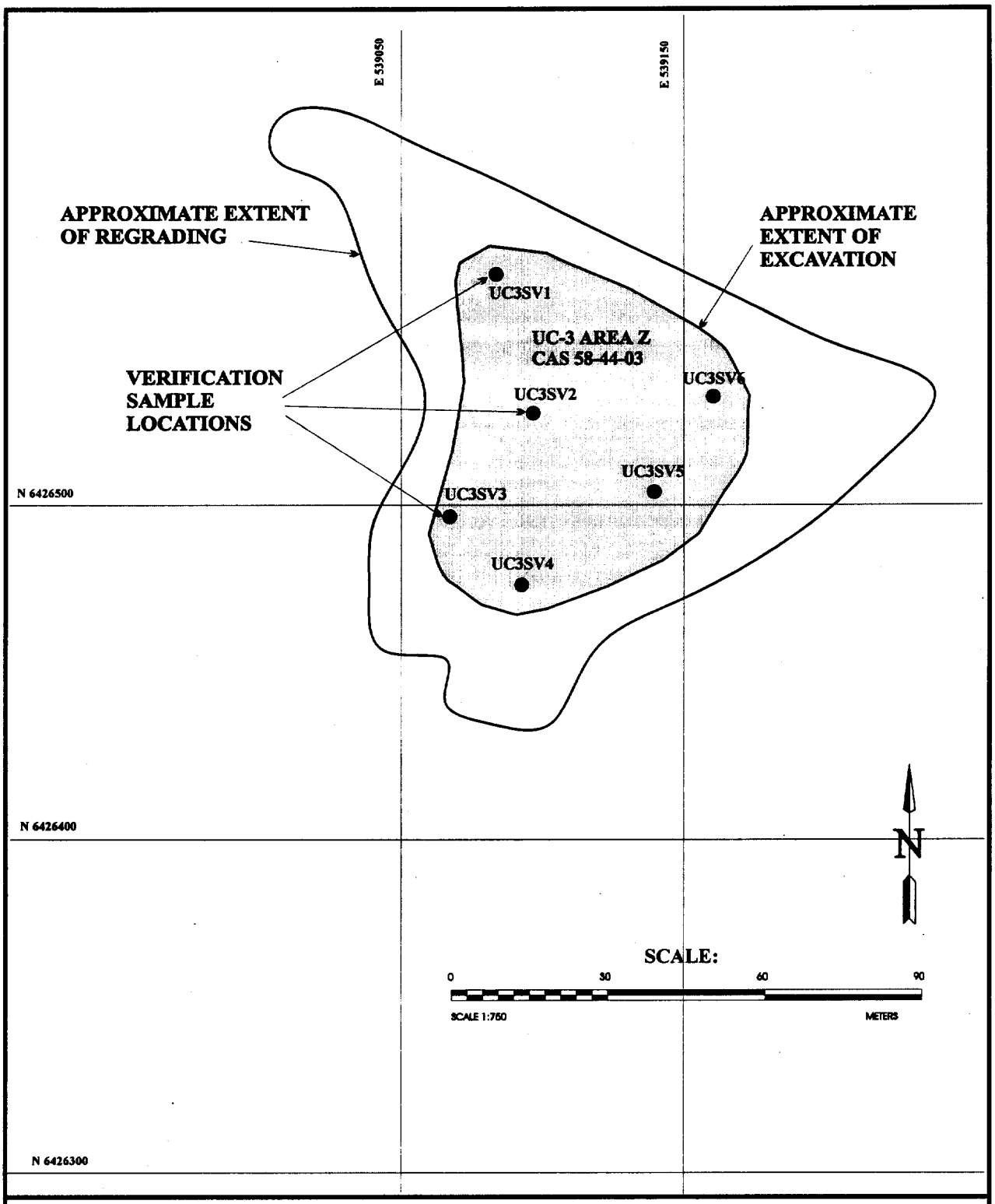


FIGURE 7 - UC-3 AREA Z VERIFICATION SAMPLE LOCATIONS

results for the samples are given in Table 3. Figure 8 shows the area layout and the location of the verification samples.

On August 16, 2000, five samples (UC4SV1 through UC4SV5) were collected from the area, three from the upper area along the southern wall of the excavation, and two from the lower area along the eastern wall of the excavation. All samples were collected from darkly stained material directly from the walls of the excavation. At the request of NDEP personnel and in an effort to limit the extent of the area excavation, these samples were submitted for TPH analysis by fraction to determine if long-chain hydrocarbons were present (personal communication, 2000a). Sample results (Table 3) showed no hydrocarbon fractions in concentrations greater than the NDEP action level for petroleum hydrocarbons (100 mg/kg). These results established the southern boundary of the upper area excavation, and the eastern boundary (the dirt access road) of the lower area excavation.

On August 22, 2000, ten verification samples (UC4SV6 through UC4SV15) were collected from the bottom of the upper and lower excavated areas (Figure 8). Samples UC4SV9, UC4SV12, and UC4SV14 had TPH levels above the NDEP action level for petroleum hydrocarbons (100 mg/kg). As a result, at each of these three verification sample sites, an area measuring approximately 6 by 6 m (20 by 20 ft) was over excavated to approximately 0.3 m (1 ft) bgs and additional verification soil samples were collected. Samples UC4SV16, UC4SV17, and UC4SV18 were collected on August 28, 2000, from the bottom of these three over-excavated areas and submitted for TPH analysis. TPH levels for these three verification samples were less than the NDEP action level for petroleum hydrocarbons (100 mg/kg). The analytical results are discussed in Section 4.1.1 (Table 5). Based upon the results of samples UC4SV16, UC4SV17, and UC4SV18, it was determined that additional removal of material from UC-4 Area S was not required (see Drawing C27, Appendix C).

All material removed from UC-4 Area S was placed directly into the UC-1 CMP mud relocation trench and stacked using a front-end loader. After verification sampling indicated that clean closure was achieved, the area was graded to restore natural drainage patterns and scarified to a depth of approximately 0.3 m (1 ft) bgs to encourage the establishment of native plant species. A water master was used to control dust generated during excavation and grading. Final grading was completed on September 14, 2000.

2.1.6.5 Closure of UC-4 Area W - CAS 58-10-04

UC-4 Area W is located in the wash south of the UC-4 Mud Pit C cover access road. On August 2 and 3, 2000, a total of approximately 290 m^3 (380 yd^3) of petroleum hydrocarbon-impacted soil was excavated from Area W and used in the UC-1 CMP cover construction. An area measuring approximately 40 by 12 m (140 by 40 ft) was excavated to an approximate depth of 0.6 m (2 ft) bgs. Six soil verification samples (UC4WV1 through UC4WV6) were collected from the bottom of the excavation on August 4, 2000 (Figure 8), and submitted for TPH analysis.

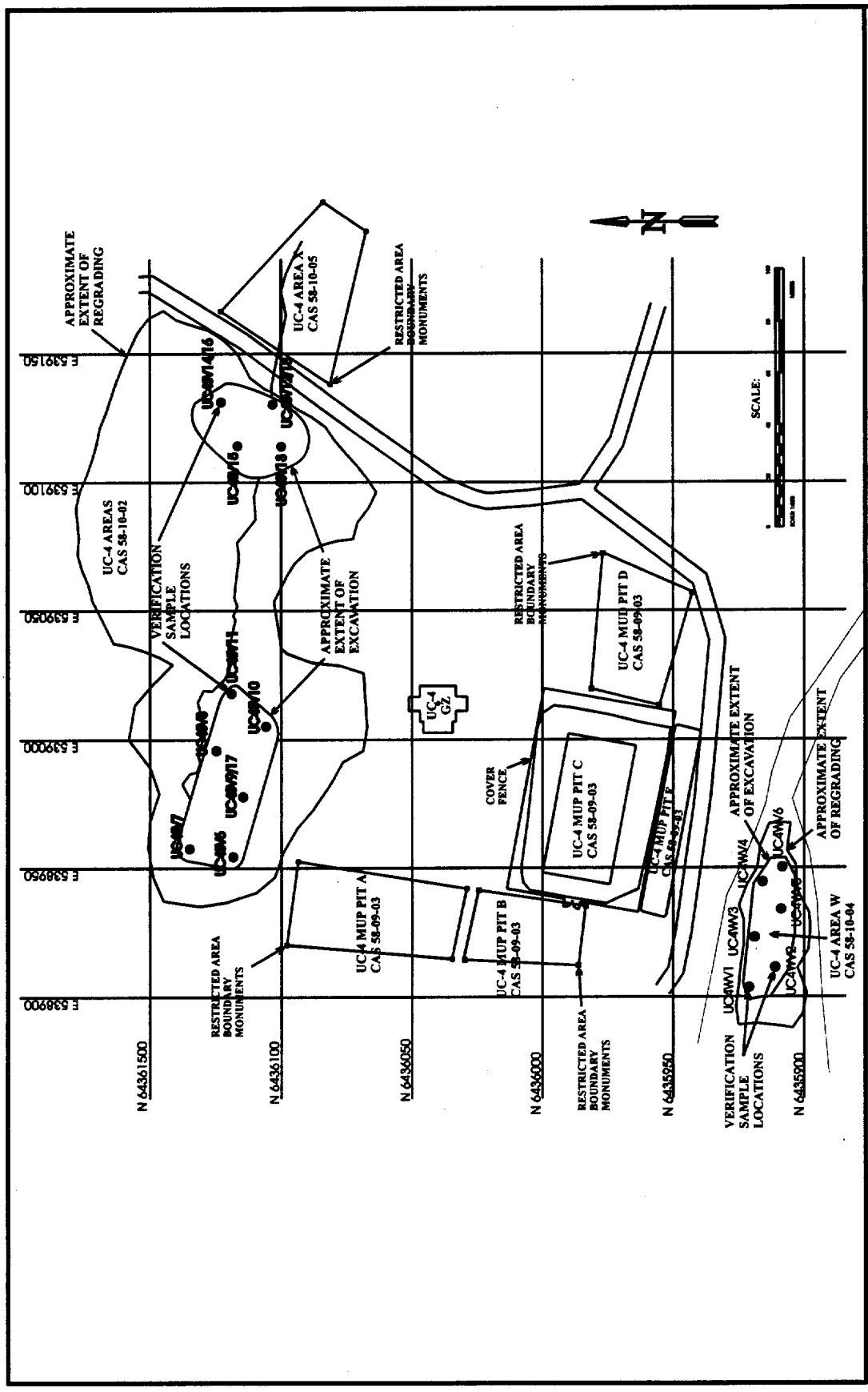


FIGURE 8 - UC-4 AREAS S AND W VERIFICATION SAMPLE LOCATIONS

TPH results for the six verification samples were less than the NDEP action level for petroleum hydrocarbons (100 mg/kg). The analytical results are provided in Table 3 and discussed in Section 4.1.1. Based on the sample results, additional removal of material from UC-4 Area W was not required (see Drawing C27, Appendix C).

All soil removed from Area W was excavated using a front-end loader and transported to the CMP using dump trucks. After verification sampling indicated that clean closure was achieved, the area was graded to restore natural drainage patterns and scarified to a depth of approximately 0.3 m (1 ft) bgs to encourage the establishment of native plant species. A water master was used to control dust generated during excavation, grading, and scarifying. Final grading was completed on August 11, 2000.

2.1.7 Closure of UC-1 Central Mud Pit - CAS 58-09-01 Corrective Actions

The UC-1 CMP was closed by constructing an engineered cover over the mud pit. The constructed cover system consists of a geogrid placed directly over the drilling mud to support heavy equipment, covered by a vegetated monolayer cap. Figure 9 shows a schematic cross section of the constructed cover. As-built drawings for the cover construction are found in Appendix C.

Cover construction activities included the following. The mud relocation trench adjacent to the western end of the CMP excavated in 1999 was enlarged to hold the additional drilling mud discovered at UC-4 Area S. An anchor bench was cut around the CMP and geogrid placed on the mud surface and anchored to the bench. Once all the mud from UC-4 Area S had been placed in the mud relocation trench, an anchor bench was cut around the trench and geogrid placed over the mud and anchored to the bench. The vegetated stabilization layer was constructed by placing two 0.6-m (2-ft) lifts of soil over the geogrid. The first 0.6-m (2-ft) lift consists of clean soil from the original berms surrounding the CMP and from the excavation of the mud relocation trench, and hydrocarbon-impacted soil excavated from five CASs that were clean closed (Section 2.1.6). Material for the initial 06-m (2-ft) stabilization layer lift was dumped at the edges of the CMP and pushed into placed on the geogrid using Low Ground Pressure (LGP) bulldozers. The second 0.6-m (2-ft) stabilization layer lift consists of clean soil from the CMP berms and the excavation of the flood diversion channels. Clean soil was dumped on the initial lift, and pushed into place using LGP and D9 bulldozers. The cover was then scarified to a depth of 0.3 m (1 ft) using a motor grader, seeded with native plant species, and mulched with straw to prevent wind erosion. Diversion channels to route run-on and run-off away from the cover were excavated to the west and east of the cover. Twelve subsidence monuments were placed on the cover to monitor subsidence. A barbed wire and mesh fence was constructed to limit access to the cover. TDR probes and recording instrumentation used to measure the soil moisture in the cover were placed at two locations in the cover. In April 2001, approximately 5,000 native plants were transplanted by hand to the cover. Specific details regarding the cover construction are discussed below.

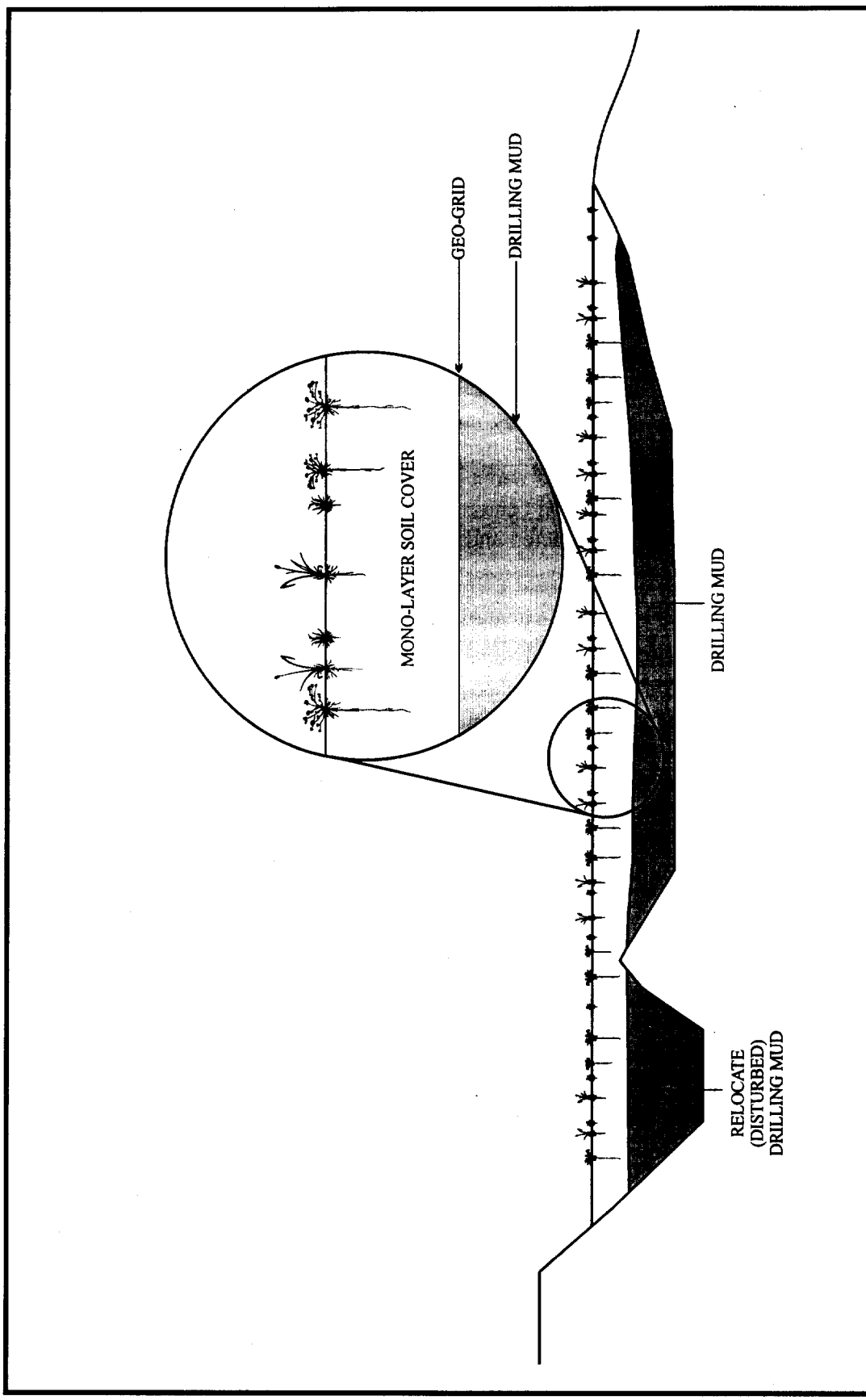


FIGURE 9 - UC-1 CENTRAL MUD PIT COVER CROSS SECTION

2.1.7.1 Site Preparation

Eight abandoned stand pipes, located in the CMP, measuring approximately 0.9 m (3 ft) in diameter and extending approximately 0.6 m (2 ft) above the surface of the mud, were cut using a cutting torch and moved to the scrap metal pile. A "raft" constructed of two 208 L (55 gal) drums and wood planking was moved from the CMP to the scrap/trash pile. Iron piping imbedded in the northern berm was pulled free from the berm, cut into manageable sized lengths, and moved to the scrap metal pile using a front-end loader. All rocks and debris lager than 15 cm (6 in) in diameter were removed from the CMP mud surface by hand. The existing barbed wire fence, wood and metal fence posts, and attached warning signs were removed. The berms surrounding the CMP and the area separating the CMP from the mud relocation trench were cleared of brush using a front-end loader. An access path for heavy equipment was cut in the existing berms. Minor road repairs and improvements were made to the UC-1 and UC-4 access roads using a motor grader. A site command trailer and generator to provide electrical power, a Conex box for storage, two-above ground fuel tanks (1,893 and 3,785 L [500 and 1,000 gal]), two portable toilets, a temporary loading dock, and a small brushed area for emergency air vehicles were established as the site command center. An electrical generator to power the submersible pump in well HTH-2 was connected and the pipe line from the well head to the sumps was reestablished.

2.1.7.2 Relocation Trench Construction

During the 1999 field activities, a trench was excavated adjacent to the UC-1 CMP. The trench was originally designed to hold an estimated 1,145 m^3 (1,500 yd^3) of drilling mud that was to be relocated from UC-4 Area S. During 1999, additional drilling mud material was discovered at the west end of UC-4 Area S bringing the approximate total amount of mud to be excavated and moved to UC-1 to 5,202 m^3 (6,800 yd^3). As a result of the discovery of the additional mud, the UC-1 mud relocation trench was expanded during year 2000 field activities.

From August 2 to 22, 2000, the UC-1 mud relocation trench was expanded from the original dimensions. The final excavated trench measured approximately 23.5 by 40.7 m (77.1 by 133.5 ft) at the bottom of the trench, and was 6.5 m (21.3 ft) deep on the western bank, and was 3.7 m (11.5 ft) deep on the eastern bank. The north and south ends of the trench were cut to a slope of 4:1 or shallower to allow access of heavy equipment. The additional clean soil excavated from the trench, was used in the CMP cover construction. A bulldozer and two scrapers were used to excavate the relocation trench. Also, the berm separating the CMP and the mud relocation trench was cleared of brush and cut to the designed height and slope angle using a bulldozer and scrapper. The bench was sloped to the east to blend the higher mud relocation trench with the lower CMP (see Drawing C29, C30, and C31 Appendix C).

2.1.7.3 Relocation of Drilling Mud from UC-4 Shaker Pad Area S - CAS 58-10-02

From August 2 to 22, 2000, approximately 5,872 m^3 (7,680 yd^3) of drilling mud was excavated from UC-4 Area S, transported to UC-1, and placed in the mud relocation trench adjacent to the CMP. The material was excavated using two front-end loaders and transported using four end dump trucks. The trucks drove into the relocation trench and dumped the drilling mud directly on to the bottom of the trench. The drilling mud was then moved and stacked to the final height using a front-end loader.

Once all the drilling mud had been placed in the trench, a geogrid anchor bench was cut around the trench perimeter. The west portion of the anchor bench was cut using a track hoe. The track hoe was operated from the top of the west bank of the trench to reach down into the trench approximately 3 to 4.5 m (10 to 15 ft) and cut the anchor bench. The north and south portions of the anchor bench were cut using a front-end loader. The berm separating the relocation trench and the CMP served as the east side of the anchor bench. This berm was graded to slope to the east using scrapers, a bulldozer, and a motor grader. This configuration produced a smooth transition from the higher relocation trench to the lower CMP. The surface of the mud in the trench was leveled by tamping with the track hoe bucket. Finally, geogrid was placed by hand over the surface of the mud in the trench (see Section 2.1.7.4).

2.1.7.4 Installation of Geogrid

2.1.7.4.1 The Central Mud Pit

A geogrid material manufactured by Huesker Inc. (product name Fornit 30 Geogrid) was placed directly over the surface of the mud in the CMP. The geogrid was a heavy woven plastic material that laterally distributed the weight of the overlying cover soils, supported the heavy equipment used to place soils, and provided a suitable sub-base for the cover. A forklift fitted with a carpet stinger was used to retrieve rolls of the geogrid from the loading area and to suspend the roll while the leading edge was advanced by hand across the CMP. Each panel of geogrid material was rolled out from the south anchor bench, across the CMP to the north anchor bench, and cut to extend a minimum of 1.5 m (5 ft) onto both anchor benches. Once in place, a front-end loader was used to place a 0.6-m (2-ft) thick anchoring layer of clean soil on the geogrid over the anchor bench. The anchoring soil layer was placed from the outside edge of the geogrid inward for 3 m (10 ft) around the entire perimeter of the CMP. Panels of geogrid material were laid in place beginning at the east end of the CMP and progressing to the west end of the CMP. Edge overlaps of geogrid panels measured a minimum of 1.2 m (4 ft), and end overlaps of panels measured a minimum of 3 m (10 ft) (Appendix E of CAP [DOE/NV, 2000]). A total of 40 panels (35 rolls) of geogrid material were used to cover the CMP surface and were placed in on July 26, 27, and 28, 2000.

2.1.7.4.2 The UC-1 Mud Relocation Trench

Once the mud relocation trench was filled with drilling mud and the surface leveled, geogrid material (Fornit 30 Geogrid) was placed by hand directly over the mud surface. Due to the physical properties of the drilling mud, the cover design specified that two layers of geogrid be used to used to cover the relocated drilling mud to assure that cover soils and the equipment would be supported. The first layer of geogrid material was placed from the anchor bench on the west edge of the trench, over the trench, over the berm at the east edge of the trench, and overlapping onto to CMP geogrid approximately 1.5 m (5 ft). These panels were placed beginning at the north end of the trench, and ending at the south end of the trench. The second layer of geogrid was placed in panels running from the south anchor bench to the north anchor bench. This layer was laid in panels beginning at the west side of the trench, and working to the east anchor bench. Edge overlap for geogrid panels measured a minimum of 1.2 m (4 ft), and end overlaps of panels measured a minimum of 3 m (10 ft) (Appendix E of CAP [DOE/NV, 2000]). Twenty-one panels were placed running west to east for the first geogrid layer. Eight panels were placed running south to north for the second geogrid layer. After the second layer of geogrid material was laid out, a front-end loader was used to place a 0.6-m (2-ft) thick anchoring layer of clean soil on the geogrid over the anchor benches. The anchoring layer was placed from the outside edge of the geogrid inward for 3 m (10 ft) around the entire perimeter of the mud relocation trench. A total of 17 rolls of geogrid was used to cover the relocation trench. Geogrid placement over the mud relocation trench was completed on August 24, 2000.

2.1.7.5 UC-1 Central Mud Pit Cover Construction - CAS 58-09-01

The UC-1 CMP cover is a vegetated monolayer design that follows the pre-existing contours of the CMP. Figure 9 presents a schematic cross section of the CMP cover as constructed. The cover is concave and designed to drain run-off to the cover center and then east off the cover through a cut in the cover berm. Precipitation that infiltrates into the cover is removed from the cover by transpiration by the plants growing on the cover. Construction of the CMP cover began on July 18, 2000, and was completed on September 12, 2000. The seeding of the cover was completed on October 20, 2000, and the transplanting of native species was completed on April 13, 2001. Cover construction activities consisted of the following:

- Removing piping and debris from the CMP.
- Cutting an anchor bench around the CMP and mud relocation trench.
- Installing geogrid material over the drilling mud (Section2.1.7.3).
- Placing a 1.2-m (4-ft) stabilization layer as two 0.6-m (2-ft) thick lifts over the geogrid.
- Constructing a fence around the cover.
- Scarifying and seeding the cover surface.
- Placing subsidence monuments on the cover.
- Installing soil moisture monitoring instrumentation.
- Constructing diversion channels to route run-on and run-off away from the cover.
- Transplanting native plants onto the cover.

Once the geogrid was installed and anchored in place, work began on placing the first 0.6-m (2-ft) lift of the stabilization layer. The first lift was comprised of both clean soil and petroleum hydrocarbon-impacted granular soil. Clean fill was obtained from the excavation of the mud relocation trench, and from the existing earthen berms surrounding the CMP. Petroleum hydrocarbon-impacted soil was from the clean closure of four CASs, 58-10-03, 58-44-06, 58-44-03, and 58-10-04. Both clean soil and hydrocarbon-impacted soil was placed at the edge of the CMP on the geogrid anchoring layer and pushed onto the geogrid using LGP bulldozers. A 0.6-m (2-ft) lift of fill was advanced from the edges to the center of the CMP from both the north and south sides of the CMP, always maintaining a minimum of 0.6 m (2 ft) of material beneath the LGP bulldozers. Elevation stakes showing a level 0.6 m (2 ft) above the mud surface were placed and maintained by a grade checker throughout the CMP. The first lift had a minimum thickness of 0.6 m (2 ft).

The second 0.6-m (2-ft) lift of the stabilization layer was clean soil obtained from the original berms surrounding the CMP and the excavation of the diversion channels. Clean soil was placed near the edges of the cover and pushed into place using LGP and D9 bulldozers. Elevation stakes showing a level 1.2 m (4 ft) above the mud surface were placed and maintained by a grade checker throughout the CMP while this lift was placed. This layer was first laid across the center of the CMP and then advanced toward both the east and west ends of the CMP. The second lift had a minimum thickness of 0.6 m (2 ft). The final surface of the second lift was shaped to the designed slope as shown on Drawing C30, Appendix C.

The stabilization layer over the mud relocation trench was constructed of two 0.6-m (2-ft) thick lifts. Both lifts are clean soil from the excavation of the diversion channels. Soil was placed at the north and south edges of the trench and moved into place using LGP dozers. The stabilization layer over the berm dividing the CMP and mud relocation trench, was used to blend the higher finished trench cover surface with the lower finished CMP cover surface as the cover design specified (see Appendix C, Drawing C33).

Following the completion of the final grading of the cover, the entire cover surface was scarified to a depth of approximately 0.3 m (1 ft) bgs to encourage the establishment of cover vegetation (see section 2.1.7.6). Twelve subsidence monuments were installed, three over the relocation trench, and nine on the CMP. The pre-cast concrete monuments measured 0.6 by 0.6 m by 15 cm (2 by 2 ft by 6 in) thick, and were set 10 cm (4 in) below grade in a grout slurry and backfilled with soil (see Drawing C36). A brass survey pin was set in the center of each monument using Sulfaset. Coordinates for each survey pin were stamped onto the pin (see Drawing C36). Subsidence data (changes in the elevation of the subsidence monuments) will be provided in future CAU 417 Post-Closure Monitoring Reports.

A 1.2-m (4-ft) high four strand barbed wire and chicken wire fence was constructed around the CMP cover area (see Appendix C, Drawing C32). Fence posts were driven into the ground at 1.5-m (5-ft) intervals around the cover. Each fence post was driven approximately 0.5 m (1.6 ft) into the ground with approximately 1.2 m (4 ft) of post exposed. A grader was used to cut a 0.3-m (1-ft) deep "V" shaped trench at the base of the fence line. A 1.2-m (4-ft) lap of chicken

wire mesh was placed at the bottom of this cut and attached to the barbed wire fence. The grader was used to back fill the cut burying the first 0.3 m (1 ft) of mesh, leaving 0.9 m (3 ft) of mesh exposed and attached to the wire fence. The mesh fencing is required to prevent animals from burrowing under the fence and destroying the vegetation. Signs warning of the presence of buried petroleum-impacted soil were attached to the fence at 14 locations (see Appendix C, Drawing C32).

2.1.7.6 Establishment of Vegetative Cover

Vegetation was established on the cover by first preparing the cover for seed, seeding the cover, applying mulch to encourage seed germination and provide protection from the wind, and finally transplanting the year-old native plant species.

The cover was prepared for seeding by scarifying the surface to an approximate depth of 0.3 m (1 ft) bgs. Next, a seed mix of native species was broadcast on the cover using a seed drill and harrowed into the cover surface using a drag chain. Straw was then blown over the cover using a straw blower, and crimped into place using a crimping machine. The straw acts as mulch for the seed, provides organic mater, and reduces the potential for erosion of the cover. A total of 105 kilograms (231.7 pounds) of bulk seed mix was applied to the UC-1 CMP cover. Table 4 gives the breakdown of the seed mixture by species and percentage of the total mixture.

During April 2001 approximately 5,200 native transplants were planted on the UC-1 CMP cover. The transplants consisted of a mix of big sagebrush, fourwing saltbush, rubber rabbitbrush, and Douglas rabbitbrush. All of the plant species are native to the CNTA area. Each transplant was placed by hand in a 13-cm (5 in) diameter hole drilled to a depth of 30.5 to 40.6 cm (12 to 16 in) bgs using a gasoline-powered hand auger. Soil was backfilled and tamped firmly into place by hand around the root ball of each transplant. Following planting, each transplant received approximately 3.8 L (1 gal) of water. Table 5 gives the number and type of plants transplanted to the CMP cover.

2.1.7.7 Installation of TDR Soil Moisture Probes

After completion of construction and prior to seeding of the CMP cover, a TDR system was installed to monitor soil moisture in the cover. The system consists of 16 TDR sensors, cabling connecting each sensor to a datalogger which collects the data, a battery and solar panel to power the equipment, and a transceiver for remote retrieval of data and access to the datalogger programing. The TDR sensors were placed in two pits excavated with a backhoe on the cover. The pits measured approximately 0.9 by 1.8 m (3 by 6 ft), and were dug to a depth of approximately 1.4 m (4.5 ft) below the cover surface, down to the level of the geogrid. In each pit, two TDR sensors were placed at 0.15, 0.5 0.76, and 1.1 m (0.5, 1.5, 2.5, and 3.5 ft) bgs, one on each side of the pit. The cables from each sensor were combined and placed into 10-cm

TABLE 4 - SEED MIXTURE USED ON THE UC-1 CENTRAL MUD PIT COVER

SPECIES	PERCENT SEED MIX	BULK SEED MIX WEIGHT kilograms (pounds)
Artemisia tridentata tridentata Basin Big sagebrush	3	4.9 (10.9)
Atriplex canescens Fourwing Saltbush	47	27.8 (61.3)
Chrysothamnus viscidiflorus Low Rabbitbrush	5	26.0 (57.3)
Ericameria nauseosa Rubber Rabbitbrush	10	33.7 (74.3)
Achnatherum hymenoides Indian Ricegrass	17	6.6 (14.6)
Aristida purpurea Three Awn	3	--
Elymus elymoides Squirreltail Grass	15	6.0 (13.3)
TOTAL BULK SEED WEIGHT		105.1 (231.7)
PURE LIVE SEED TOTAL WEIGHT		37.4 (82.5)

(4-in) flexible conduit. The conduits were placed in two shallow trenches, approximately 0.46 m (1.5 ft) bgs, running from the sensor pits to an instrument vault. The instrument vault, measuring 0.9 by 1.8 by 1.4 m (3 by 6 by 4.5 ft), is located at the approximate midpoint of the southern edge of the cover, just off the cover, approximately 3 m (10 ft) inside the fence line. The vault is flush mounted (recessed below ground surface). The TDR sensor pits are located approximately 45.7 m (150 ft) north and west of the instrument vault. Figure 10 depicts the TDR instrumentation installed in the CMP cover. Drawings W1 and W2 (Appendix C) provide details of the TDR instrumentation installation.

TDR soil moisture calibration curves were developed for the CNTA cover soils. A laboratory setup analogous to the field instrument configuration was established using the same soil type, percent compaction achieved for the cover, and sensor cable length. The laboratory setup determined the change in soil moisture by weight and the corresponding TDR sensor voltage output. Direct TDR measurements from the TDR pits are then compared to the calibration curve and a soil moisture percentage estimated (personal communication, 2001). Soil moisture data

TABLE 5 - SUMMARY OF TRANSPLANTS USED ON THE UC-1 CENTRAL MUD PIT COVER

TRANSPLANT SPECIES	PERCENT OF TOTAL TRANSPLANTS	NUMBER OF TRANSPLANTS
Artemisia tridentata tridentata Basin Big Sagebrush	50	2600
Atriplex canescens Fourwing Saltbush	25	1300
Ericameria nauseosa Rubber Rabbitbrush	10	520
Chrysothamnus viscidiflorus Low Rabbitbrush	15	780

collected from the TDR system will be used to determine how the cover performs over time compared to the predicted performance indicated by modeling results (Appendix D of the CAP [DOE/NV, 2000]). TDR data and the method used to develop the calibration curves will be reported and discussed in the annual Post-Closure Monitoring report for CAU 417.

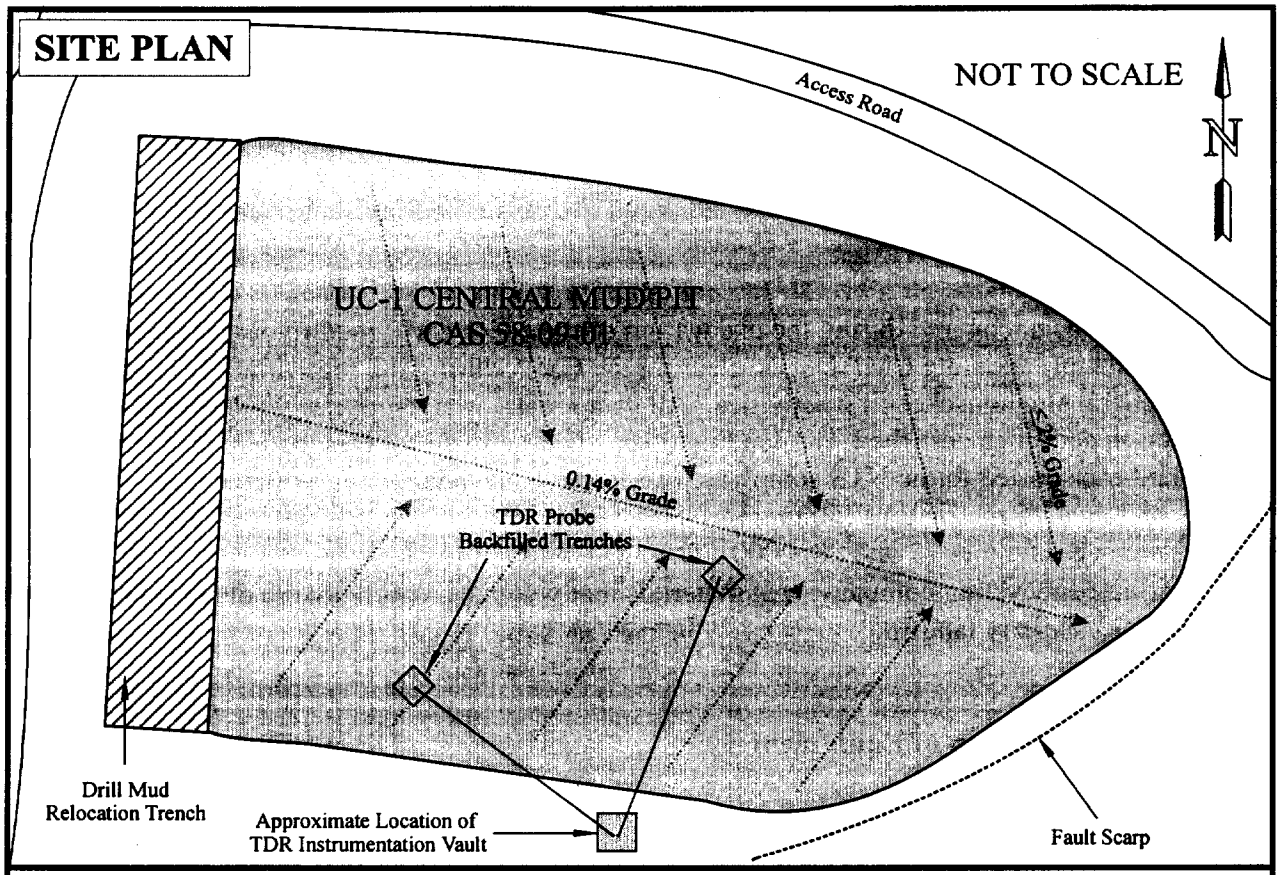
2.1.7.8 Excavation of UC-1 Cover Diversion Channels

2.1.7.8.1 Western Diversion Channel

To prevent run-on onto the CMP cover, a diversion channel was excavated to the west of the cover. The west diversion channel is approximately 391 m (1,282 ft) in length and is "U" shaped, with the base of the "U" positioned to the west of the CMP. The channel measures approximately 6 m (19.6 ft) wide at the bottom, with side slopes constructed at a ratio of 4:1. At the deepest point, the channel is approximately 2 m (6.5 ft) bgs. The northern leg of the channel is the shortest and trends to the northeast, crosses the existing UC-1 access road and daylights in a shallow natural drainage feature. The southern leg of the diversion channel parallels the southern edge of the CMP and daylights at the east end of the CMP into an existing natural drainage. The as-built configuration of the western diversion channel is shown on Drawing C34, Appendix C.

2.1.7.8.2 Eastern Diversion Channel

At the east end of the CMP, a diversion channel was constructed to divert water away from the cover and to collect run-off from the cover (Drawing C35, Appendix C). The east diversion channel measures approximately 100 m (328 ft) in length and runs along the eastern end of the CMP from the dirt access road to an existing drainage. Precipitation that collects on the CMP



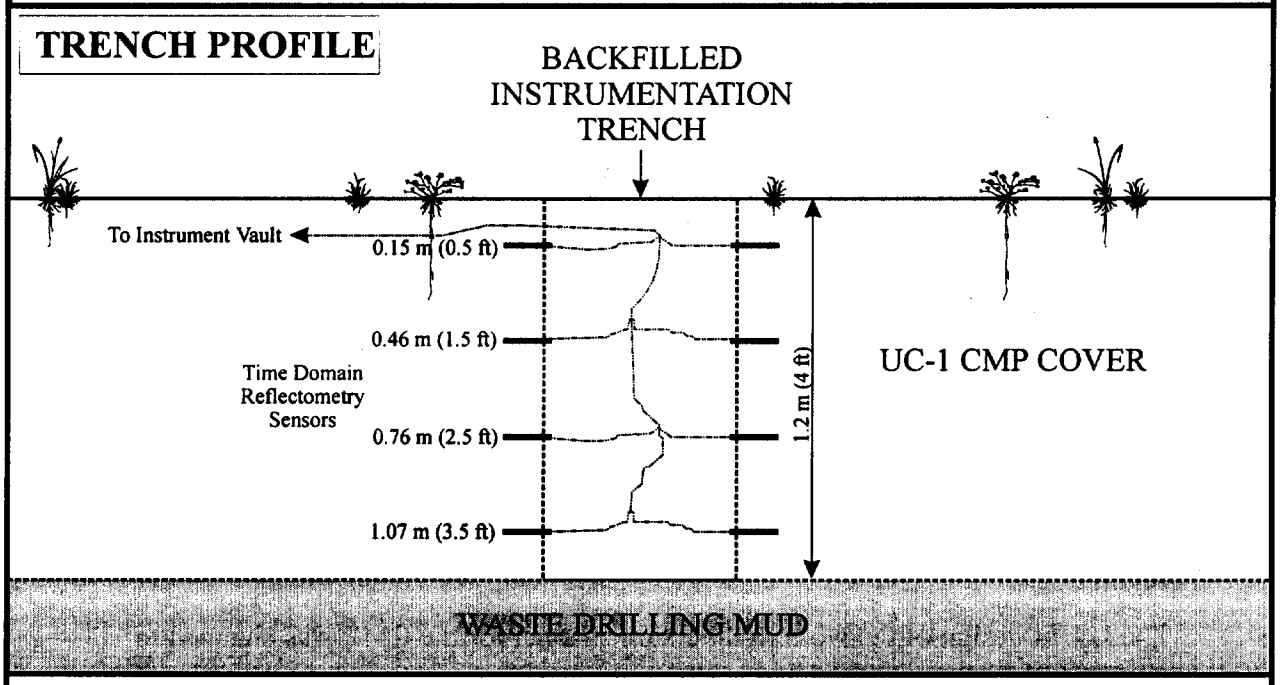


FIGURE 10
UC-1 CMP COVER MONITORING INSTRUMENTATION

cover that is not transpired by the vegetated cover is directed to the east end of the cover, drained through the designed cut in the cover perimeter berm, and channeled to the east by the east diversion channel. Run-off that collects along the south side of the UC-1 access road near the cover is directed to the east diversion channel, which outlets to an existing natural drainage.

2.1.8 Disposal of Other Wastes

Scrap metal was uncovered during the excavation of the UC-1 CMP mud relocation trench, grading of the pre-existing CMP berms, clearing the CMP, during the regrading of UC-4 Area S, and by general site housekeeping activities. All scrap metal was temporarily piled away from construction activities near the UC-1 loading dock. The scrap metal was loaded into end dump trucks and transported to the NTS scrap yard in Mercury, Nevada. A total of five truck loads, approximately 45.5 metric tons (50 tons) was transported from CNTA to the NTS Area 23 scrap yard between September 17 and 28, 2000. The metal was subsequently recycled as scrap metal by a contracted recycling company. All materials that were not recycled were disposed of in the NTS Area 23 sanitary landfill.

2.1.9 Decontamination of Equipment

All heavy equipment used in handling the mud (front-end loaders, dump trucks, tack hoe, bulldozers) were cleaned of any residue. Cleaning was performed by first using hand tools (shovels and bars) to remove dried/caked-on mud, followed by high-pressure washing using a water master and fire hose. All removed material and water was placed/used in the construction of the CMP cover.

Stainless steel scoops used to collect soil samples were decontaminated before and after sample collection using a laboratory-grade detergent solution, an isopropanol alcohol rinse, and a triple rinse with deionized water. Less than 8 L (2 gal) of detergent solution and rinsate was generated from the decontamination of scoops used to collect samples. The collected rinsate was used in the construction of the CMP cover.

2.2 DEVIATIONS FROM THE CAP, AS APPROVED

No significant deviations occurred from the approved scope of work as outlined in the CAP (DOE/NV, 2000). The following minor deviations occurred from the approved scope of work:

- The layout/design of the western diversion channel for the CMP was changed to minimize the area disturbed by construction activities, and to reduce the volume of material required to excavate. This change was documented by issuing Design Change Notice Number 00/08-419 included in Appendix C.

- With NDEP concurrence, UC-1 Area Y (CAS 58-44-06) was clean closed by excavating approximately 84 m^3 (110 yd^3) of hydrocarbon-impacted soil and using it in the CMP cover (see Section 2.1.4.3 above) (personal communications, 2000b). Three verification samples were collected and analyzed for TPH concentration. The area was regraded, and the surface scarified to encourage the establishment of vegetation. Drawing C37 (Appendix C) shows the location of UC-1 Area Y.

- UC-1 Mud Pit E, CAS 58-09-05, was closed by site posting and placement of four above-grade concrete monuments, during 1999 field activities. During the clean closure by excavation of UC-1 Area S, CAS 58-10-03, it was necessary to relocate the southwest corner monument previously placed for Mud Pit E. The monument was moved approximately 4.6 m (15 ft) north of its original location to provide better access for excavation equipment. The monument location was resurveyed and its correct position is shown on the Drawing C25, Appendix C.

- Minor repairs were made to the UC-4 Mud Pit C cover on September 15, 2000. Several small erosion rills had formed on the eastern side slope of the cover. A front-end loader was used to place and compact clean fill in these rills. All repair work was documented by photographs and field notes which will be included in the first annual Post-Closure Monitoring Report. In addition, before demobilizing from UC-4, a motor blade was used to rip the small staging areas to the west and northeast of UC-4 Mud Pit C fence line. The staging areas were scarified to approximately 25 cm (10 in) bgs to encourage the establishment of native vegetation and reduce erosion.

- Page 10 of the CAP (DOE/NV, 2000) mistakenly stated that CAS 58-44-04, UC-3 Area Y would be closed by relocating drilling mud/grout to the CMP cover as a housekeeping site. Area Y is approximately 283 by 55 m (930 by 180 ft), and is located to the southwest of the UC-3 emplacement hole. No COCs above action levels were found at this site during the 1998 site characterization, Appendix D of CADD (DOE, 1999). Therefore, a No Action closure alternative was selected for this CAS at stated in the NDEP-approved CADD (DOE/NV, 1999) and was implemented for CAS closure in 2000.

- It was mis-stated in the CAP (DOE/NV, 2000) that CAS 58-19-01 was closed by housekeeping activities in 1998. This CAS was not located in the field as stated in the NDEP-approved CADD (DOE/NV, 1999). No action was taken to close CAS 58-19-01.

2.3 CORRECTIVE ACTION SCHEDULE, AS COMPLETED

The corrective action field activities were performed in two phases. Phase I field activities began on June 30, 1999, and were completed on October 15, 1999. Figure 2 of Appendix B of the CAP (DOE/NV, 2000) shows the Phase I field activities as completed.

Phase II construction activities began on July 17, 2000, and were completed on September 26, 2000. Seeding of the cover and the installation of TDR instruments was completed during October 2000. Transplanting native plant species onto the cover was completed during April 2001. A Phase II field activities schedule, as completed, is shown in Figure 11. Activities such as post-closure monitoring are ongoing and are not included in this schedule.

2.4 CUA 417 FINAL SURVEY AS-BUILT DRAWINGS

The final engineering as-built drawings for the engineered covers, sites clean closed, and sites closed by posting are located in Appendix C. Figure 4 shows a cross section of the UC-4 Mud Pit C cover, and Figure 9 depicts a cross section of the UC-1 CMP cover as constructed.

ACTIVITY DESCRIPTION	Activity Duration (days)
CAU 417 Central Nevada Test Area Closure	
Mobilization	15
Clean Closure of UC1 Area Y	2
Clean Closure of UC1 Area S	3
Clean Closure of UC3 Area Z	4
Clean Closure of UC4 Area S	42
Clean Closure of UC4 Area W	2
UC-1 CMP Cover Construction	54
Fencing Installation	10
Subsidence Monument Installation	2
Seeding and Mulching CMP cover	5
TDR Installation	2
Transplanting Seedlings to CMP cover	5
Demobilization	15

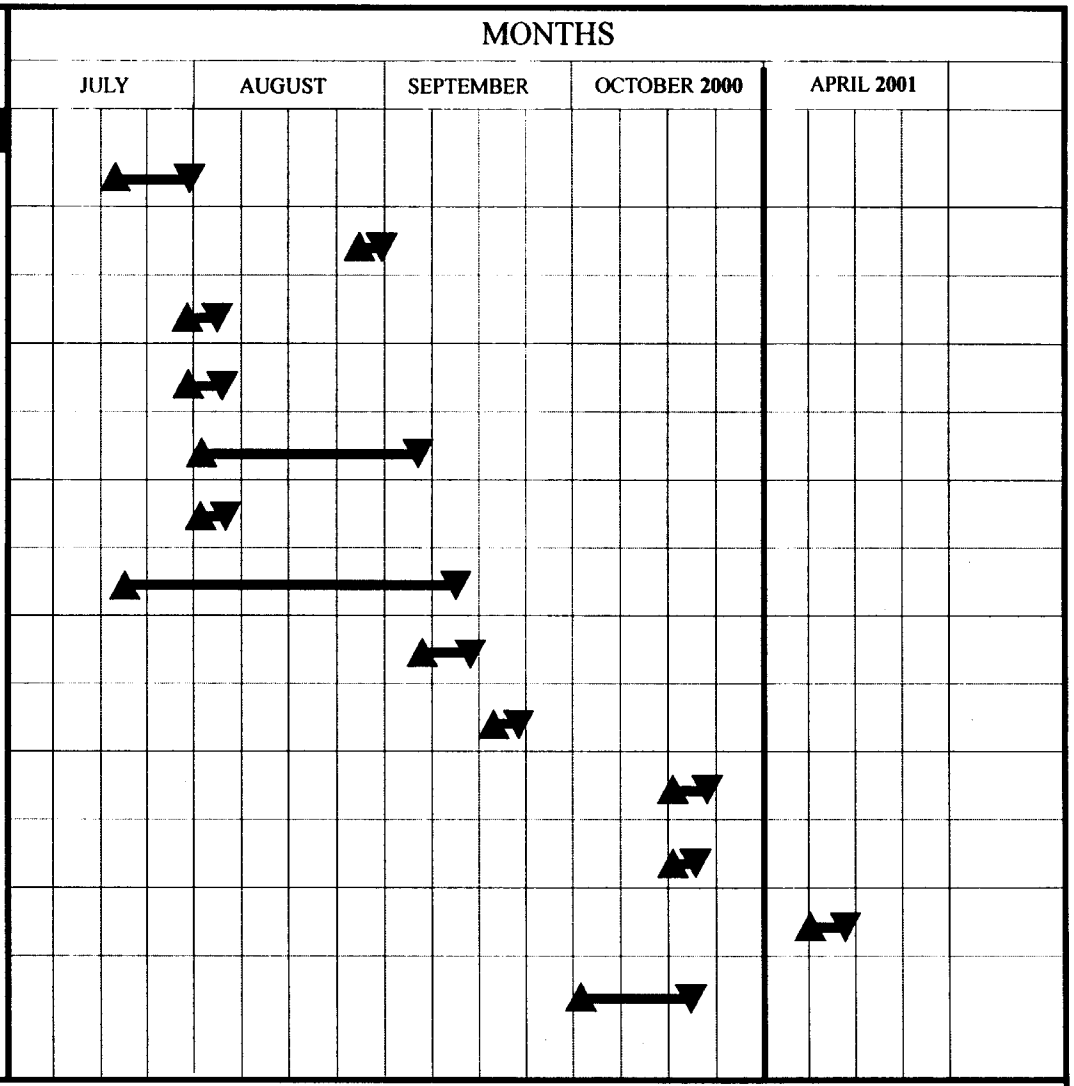


FIGURE - 11
CAU 417 SCHEDULE OF ACTIVITIES AS COMPLETED

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3.0 WASTE DISPOSITION

Wastes generated during the closure of CAU 417 consisted of scrap metal, sanitary trash, and a small amount of petroleum hydrocarbon-impacted soil.

Scrap metal generated by site activities was hauled to the NTS Area 23 Scrap Yard for salvage. A total of five truck loads, approximately 45.4 metric tons (50 tons), of scrap metal was hauled to the NTS. The metal was subsequently recycled as scrap metal by a contracted recycling company. All materials that were not recycled were disposed of in the NTS Area 23 sanitary landfill.

Sanitary trash generated by site activities included paper, plastic, aluminum, and wood. This waste was packaged into 9.2 L (35 gal) trash bags daily (four bags per work day) and transported to the TTR for disposal. A total of approximately 26.5 m^3 (34.6 ft^3) of sanitary trash was disposed of during 2000 field work.

Petroleum hydrocarbon-impacted materials were removed from heavy equipment during the cleaning activities. All removed materials were incorporated into the UC-1 CMP cover.

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4.0 CLOSURE VERIFICATION RESULTS

CAU 417 was closed by implementing one of five closure actions at each CAS: No Action, Housekeeping, Administrative Closure by Site Posting, Clean Closure by Excavation, and closure in place by constructing an Engineered Cover. Closure verification of the UC-1 CMP by construction of an engineered cover consisted of a signed CAU 417 SITA Approval Matrix/Checklist located in Appendix G. Guidance for the UC-1 CMP cover construction and verification was provided in the approved SITA Plan Phase II, Appendix E of the approved CAP (DOE/NV, 2000).

Guidance for the UC-4 Mud Pit C cover construction and verification was provided in the approved SITA Plan Phase I, Appendix A of the approved CAP (DOE/NV, 2000). A copy of the signed SITA Approval Matrix for the Phase I construction activities is included in Appendix A of the CAP (DOE/NV, 2000).

4.1 DATA QUALITY ASSESSMENT

The closure of CAU 417 did not require the development of formal data quality objectives. Construction of the UC-1 CMP and UC-4 Mud Pit C engineered covers were guided by the Phase I and Phase II SITA Plans, respectively. Phase II construction followed a SITA Approval Matrix and Checklist provided in Appendix E of this document. Phase I construction followed a SITA Approval Matrix and Checklist provided in Appendix A of the approved CAP (DOE, 2000). For the CASs that were clean closed by excavation, soil verification samples were collected and analyzed for the presence of petroleum hydrocarbons. Sample results are discussed below and included in Appendix A. All constructions and sampling QA standards identified in the CAP (DOE/NV, 2000) were met.

4.1.1 VERIFICATION SAMPLE ANALYSES

Five CASs (58-10-03 UC-1 Area S, 58-44-06 UC-1 Area Y, 58-44-03 UC-3 Area Z, 58-10-02 UC-4 Area S, and 58-10-04 UC-4 Area W) were clean closed by the excavation of hydrocarbon-impacted material. Verification soil samples were collected from 39 locations after the excavations reached designated boundaries. The samples were collected with decontaminated stainless steel sampling scoops and placed in labeled 250 milliliter (8 ounce) clear glass sample containers and secured with custody seals. The containers were placed in zip-lock plastic bags, in an ice-filled chest, and transported under chain-of-custody to Nevada Environmental Laboratories in Las Vegas, Nevada for TPH analyses. Samples from 39 locations were analyzed for TPH by U.S. Environmental Protection Agency (EPA) Method 8015M (EPA, 1996). Laboratory quality assurance and quality control results obtained during the analysis of the verification samples are included with the analytical results in Appendix A.

CAS 58-10-03, UC-1 Area S Verification Results

Following excavation, five verification samples were collected at UC-1 Area S on August 1, 2000 (Figure 5). One sample, UC1SV1, exceeded the NDEP TPH action level of 100 mg/kg. Additional material was excavated from the immediate area around this sample location, approximately 6 by 6 by 0.3 m (20 by 20 by 1 ft) volume of material was removed. A sixth verification sample (UC1SV6) was collected from the bottom of the second excavation and submitted for TPH analysis. This sample did not exceed the TPH action level. After excavating approximately 1,177 m^3 (1,540 yd^3) of hydrocarbon-impacted material, and moving it to the CMP cover, UC-1 Area S is considered clean closed. Sample analytical results are found in Table 3 and in Appendix A.

CAS 58-44-06, UC-1 Area Y Verification Results

Following excavation, two verification samples were collected at UC-1 Area Y (Figure 6). One sample (UC1YV2) exceeded the NDEP TPH action level of 100 mg/kg. Additional material was excavated from the immediate area of this sample location; approximately 4.6 by 4.6 by 0.5 m (15 by 15 by 1.5 ft) volume of material was removed. A third verification sample (UC1YV3) was collected from the bottom of this over-excavated area and submitted for TPH analysis. This deeper sample did not exceed the TPH action level. Therefore, after excavating approximately 84 m^3 (110 yd^3) of hydrocarbon-impacted material, and moving it to the CMP cover, UC-1 Area Y is considered clean closed. Sample analytical results are found in Table 3 and in Appendix A.

CAS 58-44-03, UC-3 Area Z Verification Results

Following excavation of approximately 1,621 m^3 (2,120 yd^3) of hydrocarbon-impacted material, six verification samples were collected at UC-3 Area Z (Figure 7). No sample exceeded the NDEP TPH action level of 100 mg/kg. Therefore, UC-3 Area Z is considered clean closed. Sample analytical results are found in Table 3 and in Appendix A.

CAS 58-10-02, UC-4 Area S Verification Results

UC-4 Area S is located in a east-west trending drainage ravine just north of the UC-3 emplacement hole. Area S was excavated as two distinct areas, the upper western site and the lower eastern site. The area between the upper and lower sites was not extensively excavated as characterization results indicated no contaminated material present.

Verification samples were collected from both the upper and lower excavation sites. Samples UC4SV1 and UC4SV2 were collected from a 0.3-m (1-ft) thick seam of dark material/mud exposed during excavation of the lower eastern site. The seam was confined to the lower excavation area. Results for the two samples were less than the TPH action level.

Samples UC4SV3, UC4SV4, and UC4SV5 were collected from a 1-m (3.3-ft) thick dark seam of material/mud present in the southern wall of the upper excavation site. The seam was located approximately 3 m (10 ft) below the top of the berm forming the Area S southern boundary, and appeared to continue south under the berm and beyond the boundary. With NDEP concurrence, the collected samples were analyzed for TPH components, gasoline, diesel, and oil to determine if any long-chain hydrocarbons were present in the stained material (personal communication, 2000a). Results for the three samples were less than the TPH Action Level and this information was used to bound the lateral extent to the south of the upper area excavation.

Following excavation, 18 verification samples were collected at UC-4 Area S (Figure 8). Three samples (UC4SV9, UC4SV12, UC4SV14) exceeded the NDEP TPH action level of 100 mg/kg. After additional excavation of the immediate area about these sample locations, deeper samples were collected (UC4SV16, UC4SV17, UC4SV18) which did not exceed the action level. Sample analytical results are found in Table 3 and in Appendix A.

CAS 58-10-04, UC-4 Area W Verification Results

Following excavation, six verification samples were collected at UC-4 Area W (Figure 8). No sample exceeded the NDEP TPH action level of 100 mg/kg. Sample analytical results are found in Table 3 and in Appendix A.

4.2 LAND-USE RESTRICTIONS

CAU 417 has been closed in accordance with the approved CAP (DOE/NV, 2000). Site closure included the closure of two CASs by constructing engineered covers, and seven CASs (nine sites) by site posting. The future use of any land related to these 11 sites is restricted from any activity that may alter or modify the buried contaminated soil/material as approved by the State and identified in this CR unless appropriate concurrence is obtained in advance from the NDEP.

The specific location of the site boundary monuments and fence corners for the 11 sites that are restricted are given on the CAU Use Restriction Information forms and drawings provided in Appendix F. This information is entered into the NNSA/NV Facility Information Management System and the Central Data Repository. The original CAU Use Restriction Information form is filed with the CAU 417 project file. In addition, the land-use restriction information will be placed in the official BLM land withdrawal file (See BLM letter to DOE, Appendix F).

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5.0 POST-CLOSURE MONITORING PLAN

Post-closure monitoring of the CNTA sites is intended to determine:

- If maintenance and repairs to the UC-1 CMP or the UC-4 Mud Pit C covers, fences, and diversion channels are needed.
- If the UC-1 CMP or UC-4 Mud Pit C covers are subsiding.
- If the UC-1 CMP cover is performing as designed.
- The state of the health of the vegetation on the UC-1 CMP cover.
- If maintenance and repairs to the above-grade monuments and warning signs are needed.
- If modifications to the use restriction administrative controls are needed.

Table 1 lists 24 CASs (29 sites) that were closed by taking no action or by housekeeping activities. Sites include those having no COCs above Action Levels, housekeeping sites that have been remediated, two septic tanks that were closed in place by backfilling with clean soil, and two USTs that were removed. These sites do not require any post-closure monitoring or inspections. In addition, the five CASs that were closed by excavation and limited regrading (Table 1), also require no post-closure monitoring. In total, 29 CASs (34 sites) do not require any post-closure monitoring.

5.1 POST-CLOSURE MONITORING REQUIREMENTS

The components of the CNTA post-closure monitoring plan are provided below.

5.1.1 Site Inspections

Post closure inspections of CAU 417 will be done quarterly, four times a year. Site inspections will include visual observations of the UC-1 and UC-4 covers, and all above ground monuments, attached warning signs, and survey pins. Each site inspection will be documented on a site inspection form and with site photographs. The post-closure inspection will consist of the following:

- A detailed visual inspection of the UC-1 CMP cover and the UC-4 Mud Pit C cover fencing. The perimeter of the fencing at both covers will be walked by the inspector and the condition of the barbed wire and the chicken wire fencing, warning signs, and

entrance gate and lock will be documented.

- A visual inspection of all above-grade monuments, attached warning signs, and affixed survey pins placed at UC-1, UC-3, and UC-4 sites for signs of wear, disturbance, vandalism, presence of animal burrows, etc. Repairs to monuments and/or attached signs will be made during site inspection visits, or if necessary scheduled for later in the calendar year.

- Determine the condition of the two subsidence monuments on the UC-4 cover, and the 12 subsidence monuments on the UC-1 CMP cover. In addition, twice a year all subsidence monuments will be surveyed to determine if the covers have subsided.

- Any changes to the cover or fenced area will be documented. Specific changes include, but are not limited to, the presence of trash/debris inside the fenced area, animal burrows on the cover or under the perimeter fence, the presence of erosion features on the cover, cover side slopes, or diversion channels. Any changes in the health of the CMP cover vegetation will also be documented.

5.1.2 Cover Monitoring

The UC-1 CMP cover was designed to limit infiltration into the underlying waste unit by removing soil moisture from the cover by transpiration by vegetation on the cover surface. The effectiveness of the cover design will be determined by monitoring soil moisture content in the cover. Soil moisture content will be measured by TDR sensors buried at various depths in the cover.

TDR sensors were buried in the cover at two locations during cover construction (see Section 2.1.7.7 and Figure 10). At each location two TDR sensors were placed at 0.15, 0.46, 0.76, and 1.07 m (0.5, 1.5, 2.5 and 3.5 ft) below the surface of the cover (Figure 10). The TDR nests are located approximately 48 m (157 ft) northwest and 48 m (157 ft) northeast of the location of the instrument vault located off the southern edge of the cover (Figure 10, Drawing W1, Appendix C). Data is collected once per day from each TDR sensor and stored in a datalogger located in the instrument vault. The stored TDR data and precipitation data are retrieved periodically by satellite link for processing and analysis.

5.1.3 Compliance Criteria

The CNTA UC-1 CMP cover boundary is defined by the fence installed around the cover. The fence encloses approximately 6 hectares (14.8 acres). The point of compliance for the UC-1 cover is the depth of the deepest TDR soil moisture probe (approximately 1.07 m [3.5 ft] bgs). Cover compliance will be based on the soil moisture content of the cover. The specific criteria

will not be set until the cover has had sufficient time to reach equilibrium. Once the soil moisture content within the cover has reached equilibrium, soil moisture trigger values will be agreed upon with the NDEP.

If soil moisture data indicate that the cover is not operating according to established compliance criteria, the NDEP will be notified of the noncompliance within 14 days. After NDEP has been notified of noncompliance, a work plan will be submitted to the NDEP within 90 days outlining the proposed remediation/investigation plan. All corrective actions will be documented in the annual Post-Closure Monitoring Report.

5.1.4 Site Maintenance and Repair

If a site inspection shows conditions that require major repairs, or that either the UC-1 CMP cover or UC-4 cover are not in compliance, the NDEP will be notified and a work plan proposing the corrective actions prepared and submitted to the NDEP within 90 days.

- Non-critical cracks, animal burrows, settling features less than 15 cm (6 in) deep will be repaired by hand during site inspection visits.
- Minor features such as the presence of small mammal burrows, cracks, settling imperfections, or erosional rills (<15 cm [6 in]), etc., will be repaired during inspection visits, or if necessary, scheduled for repair on an annual basis.
- In critical areas (on side slopes adjacent to the cover, or on the cover itself), cracks, settling features, erosional rills, animal burrows larger than 15 cm (6 in) deep which extend 1 m (3 ft) or more will be evaluated and repaired within 60 days of detection.
- Twice a year the 12 subsidence monuments on the UC-1 CMP cover and the two subsidence monuments on the UC-4 Mud Pit C cover will be surveyed to determine if the cover has subsided.
- Damage to the fencing surrounding the UC-1 cover and the UC-4 cover will be evaluated and repaired within 60 days of detection.

All repair work will preserve the original cover "as built" design and will be documented in the annual post-closure inspection report. If repair of the cover requires modification to the cover design, the NNSA/NV will present a formal design modification request to the NDEP prior to making the repairs.

5.1.5 Annual Reporting

A post-closure inspection will be made twice a year for five years following completion of closure field activities. All inspection and maintenance activities conducted during the year will be documented and included in the annual monitory report. The annual Post-Closure Monitoring Report will be submitted by the NNSA/NV to the NDEP and will include the following information:

- A brief narrative and discussion of all post-closure inspection activities and observations.
- Copies off all completed inspection checklists (Appendix H) and maintenance records.
- UC-1 CMP soil moisture content profiles through the previous year.
- Survey settlement data.
- Maintenance and repair documentation (if any).
- Specific recommendations for non-standard maintenance or changes in post-closure monitoring.

All closure and post-closure monitoring documentation will be retained in project files and will be available on request.

6.0 SUMMARY AND RECOMMENDATIONS

6.1 SUMMARY

The following site closure activities were performed at the 34 CASs comprising CAU 417 and are documented in this report:

- No closure action was taken at 13 CASs (17 sites): 58-05-01, 58-07-01, 58-05-04, 58-09-05 (Mud Pits C and D only), 58-35-01, 58-05-02, 58-09-06 (Mud Pits A, B, C, and D), 58-10-06, 58-19-01, 58-35-02, 58-44-04, 58-05-04, and 58-09-03 (Mud Pit E only).

- Housekeeping activities, collecting scrap materials, and transporting to approved landfill sites at the NTS were used to close seven CASs: 58-44-01, 58-44-02, 58-44-05, 58-98-03, 58-98-01, 58-98-02, and 58-98-04.

- Two CASs (58-05-03 and 58-99-01) were closed by excavation and removal of USTs.

- Two septic tanks (CASs 58-05-05 and 58-05-06) were closed by backfilling with clean fill.

- Site posting with above-grade monuments and attached warning signs and land-use restrictions were used to close seven CASs (nine sites): 58-09-02, 58-09-05 (Mud Pit E only), 58-09-06 (Mud Pit E only), 58-10-01, 58-25-01, 58-09-03 (Mud Pits A, B, and D), and 58-10-05.

- Clean closure by excavation soil with TPH levels greater than the NDEP action level of 100 mg/kg and limited regrading was used to close five CASs: 58-10-03, 58-44-06, 58-44-03, 58-10-02, and 58-10-04.

- Construction of engineered covers was used to close in place two CASs: 58-09-01 and 58-09-03 (Mud Pit C only). Following construction, a fence was constructed around each cover to prevent damage to the cover or intrusion by wildlife.

6.2 RECOMMENDATIONS

Since the closure activities for CAU 417 have been completed following the NDEP-approved CAP (DOE/NV, 2000) as documented in this CR, the NNSA/NV requests:

- A Notice of Completion be provided by the NDEP to NNSA/NV for the closure of CAU 417 (CAS 58-05-01, 58-07-01, 58-09-01, 58-09-02, 58-09-04, 58-09-05, 58-10-03, 58-35-01, 58-44-01, 58-44-02, 58-44-05, 58-44-06, 58-98-03, 58-05-02, 58-05-03, 58-05-05, 58-05-06, 58-09-06, 58-10-01, 58-10-06, 58-19-01, 58-25-01, 58-35-02,

58-44-03, 58-44-04, 58-98-01, 58-98-02, 58-98-04, 58-99-01, 58-05-04, 58-09-03, 58-10-02, 58-10-04, 58-10-05)

- CAU 417 be moved from Appendix III to Appendix IV of the FFACO "Closed Corrective Action Units."

7.0 REFERENCES

BN, see Bechtel Nevada.

Bechtel Nevada, 2000a. Field Management Plan for Corrective Action Unit 417 Central Nevada Test Area Surface, Nevada, Las Vegas, NV.

Bechtel Nevada, 2000b. Site Specific Health and Safety Plan for Closure Activities for the Cental Nevada Test Area: CAU 417, Revision 1, Las Vegas, NV.

DOE/NV, see U.S. Department of Energy, Nevada Operations Office.

EPA, see U.S. Environmental Protection Agency.

FFACO, see Federal Facility Agreement and Consent Order.

Federal Facility Agreement and Consent Order of 1996 as amended. Agreed to by the Nevada Division of Environmental Protection, U.S. Department of Energy, and U.S. Department of Defense.

Levitt, Dan. 2001. Personal communication to K. Campbell, Bechtel Nevada Environmental Restoration.

Nevada Administrative Code, 1996. NAC 445A.2272, "Contamination of soil: Establishment of action levels," As adopted by the Nevada Environmental Commission, October, Carson City, NV.

Sanders, Peter. 2000a. Personal communication from Paul J. Liebendorfer, P.E., Chief Department of Conservation and Natural Resources, Nevada Division of Environmental Protection, during August 16, CNTA site visit.

Sanders, Peter. 2000b. Personal communication from Sig Jaunarajs, Nevada Division of Environmental Protection.

U.S. Department of Energy, Nevada Operations Office, 1997. Corrective Action Investigation Plan for Central Nevada Test Area CAU No. 417, Revision 0, DOE/NV–450, Las Vegas, NV.

U.S. Department of Energy, Nevada Operations Office, 1998. Nevada Environmental Restoration Project, Health and Safety Plan, Revision 3, Las Vegas, NV.

U.S. Department of Energy, Nevada Operations Office, 1999. Corrective Action Decision Document for Corrective Action Unit 417: Central Nevada Test Area Surface, Nevada, Revision 1, DOE/NV–524, Las Vegas, NV.

U.S. Department of Energy, Nevada Operations Office, 2000. Corrective Action Plan for Corrective Action Unit 417: Central Nevada Test Area Surface, Nevada, Revision 0, DOE/NV--588, Las Vegas, NV.

U.S. Environmental Protection Agency, 1996. Test Methods for Evaluating Solid Waste, Physical/Chemical Methods, EPA Publication SW-846, Third Edition.

Wycoff, Runore, 1998. Letter to Paul J. Liebendorfer, P.E., Chief Department of Conservation and Natural Resources, Nevada Division of Environmental Protection, December 30, 1998.

APPENDIX A

VERIFICATION SAMPLING ANALYTICAL RESULTS

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NEL LABORATORIES
Reno • Las Vegas • Boise
Phoenix • Sacramento

Las Vegas Division
4208 Arcata Way, Suite A • Las Vegas, NV 8903
(702) 657-1010 • Fax: (702) 657-157
1-888-368-328

CLIENT: Bechtel Nevada
P.O. Box 98521, M/S NTS273
Las Vegas, NV 89193-8521
ATTN: Ted Redding

PROJECT NAME: V853
PROJECT NUMBER: 17777

NEL ORDER ID: L0008027

Attached are the analytical results for samples in support of the above referenced project.

Samples submitted for this project were not sampled by NEL Laboratories. Samples were received by NEL in good condition, under chain of custody on 8/2/00.

Should you have any questions or comments, please feel free to contact our Client Services department at (702) 657-1010.

Stan Van Wagenen
Laboratory Manager

8/3/00
Date

CERTIFICATIONS:

	Reno	Las Vegas	S. California
Arizona	AZ0520	AZ0518	AZ0605
California	1707	2002	2264
US Army Corps of Engineers	Certified	Certified	

	Reno	Las Vegas	S. California
Idaho	Certified	Certified	
Montana	Certified	Certified	
Nevada	NV033	NV052	CA084
L.A.C.S.D.			10228

CLIENT: Bechtel Nevada
PROJECT ID: V853
PROJECT #: 17777

TEST: Total Extractable Petroleum Hydrocarbons by EPA Method 8015M, December 1996
METHOD: EPA 8015M
ORDER ID: L0008027
MATRIX: Solid
ANALYST: SLB - Las Vegas Division

CLIENT SAMPLE ID	SAMPLE DATE	NEL SAMPLE ID	RESULT mg/kg	C.R.	Reporting Limit	Surrogate Recovery*	EXTRACTED	ANALYZED
UCISV1	8/1/00	L0008027-01	170	D	20. mg/kg	91 %	8/2/00	8/3/00
UCISV2	8/1/00	L0008027-02	41	D	20. mg/kg	82 %	8/2/00	8/3/00
UCISV3	8/1/00	L0008027-03	62	D	20. mg/kg	91 %	8/2/00	8/3/00
UCISV4	8/1/00	L0008027-04	20	D	20. mg/kg	90 %	8/2/00	8/3/00
UCISV5	8/1/00	L0008027-05	24	D	20. mg/kg	86 %	8/2/00	8/3/00

C.R.: Carbon Range
D Diesel Range Organics (C10 to C28).

QUALITY CONTROL DATA (Total for Diesel Range):

Sample ID	Result	Acceptable Range	Surrogate Recovery*	Sample Number
Blank, 000802TP -BLK	ND	< 20 mg/kg	94 %	NA
LCS, 000802TPHS-LCS	68 %	54 - 91 %	100 %	NA
LCSD, 000802TPHS-LCSD	65 %	54 - 91 %	91 %	NA

*** Surrogate used was Octacosane, acceptance limits 55-130%.**

ND - Not Detected

BN

L000 8027 D/3

Custody Seal Intact: (Y) N None Temp: 6°C

Bechtel Nevada

ANALYTICAL SERVICES LABORATORY **Condition when received: Poor (Good)**

SERVICES REQUEST & CHAIN OF CUSTODY RECORD

Page 1 of 1

PROJECT/ CLIENT INFORMATION

Project: CNTA 2000 BN Org#: 2152
Charge No.: C8G014AC ASL Prog.:
Project Manager: Wayne Johnson
Phone: 295-0573 Fax: 295-7761 M/S: NTS 306

REPORT INFORMATION

Send Report to: Dave Medsen
Phone: 295-7211 Fax: 295-7761 M/S: NTS 306
Turnaround: ( ) Standard - 30 days Non-rad, 60 Days Rad, Other: ____
(X) Rush Preliminary by: 24 HOUR Final by: ____
Final report format: (X) Standard ( ) NTS-WAC ( ) Other: ____

SAMPLE INFORMATION

Sampling Site: UC-1 Area 3
The samples submitted contain (check):
( ) Hazardous ( ) Radioactive (X) Unknown
contamination. If known, attach a brief narrative summary identifying contaminants. This information will ensure compliance with applicable regulations and allow for the safe handling of the sample materials.

LAB USE ONLY

Rad SGD: Non-Rad SDG: V853
Rad Packet: Non-Rad Packet: W1897 W1895gs

Client Services Representative:

Will these analyses be performed under a signed SOW? ( ) YES ( ) NO
If so, do analyses entered here agree with the SOW? ( ) YES ( ) NO ( ) N/A
If not, identify the variation ____
CSR initials indicating review and approval: ____ Date: ____

ANALYSES & METHOD

ITEM	ID / DESCRIPTION	SAMPLING DATE	SAMPLING TIME	MATRIX	TPH Diesel Oil
0	UC1SV1	8-1-00	1600	Soil	✓
1	UC1SV2	8/1/00	1610	soil	✓
2	UC1SV3	8/1/00	1615	soil	✓
3	UC1SV4	8/1/00	1620	soil	✓
4	UC1SV5	8/1/00	1625	soil	✓
5					
6					
7					
8					
9					

SAMPLE RECEIPT INFORMATION

Are all sample containers received intact (X) Yes ( ) No
Comments: ____

Do the labels agree with this form? (X) Yes ( ) No
Comments: ____

Was a Material Clearance Tag submitted? (X) Yes ( ) No
Comments: ____

COMMENTS

(Preservative, size/volume, MS/MSD, special analysis, rad matrix code, count time, etc.)

Soil Samples from UC-1 Area 3 on 1
" Area 5 "
" " "
" " "
" " "
Due to Process knowledge there is no rad Constituents

Transfer of samples submitted for analyses

Sampled/Relinquished (Signature/Organization)	DATE / TIME	Received by (Signature/Organization)
R. Carrillo	8/1/00 1629	BN/ER
	8/2/00 0845	David A. Cox/BN/ER
David A. Cox/BN/ER	8/2/00 0910	T Burns

Complete for samples shipped to an OFF-SITE Subcontract Laboratory NEL

Relinquished (BN Representative Signature)	DATE / TIME	Received (Courier & Tracking Info.)
T Burns	8/2/00 1300	BN Courier 2012028
Relinquished (Courier & Tracking Info.)	**DATE / TIME**	**Received (1st tier Subcontractor Rep)**
BN COURIER	8/2/00 1545	
Relinquished (1st tier Subcontractor Rep)	**DATE / TIME**	**Received (2nd tier Subcontractor Rep)**

Distribution: Original - To be retained by laboratory performing final analysis
Copy 1 - To be retained by laboratory performing intermediate analysis

BN-0732 (02/98)

NEL LABORATORIES
Reno • Las Vegas • Boise
Phoenix • Sacramento

Las Vegas Divisio
4208 Arcata Way, Suite A • Las Vegas, NV 8903
(702) 657-1010 • Fax: (702) 657-157
1-888-368-328

CLIENT: Bechtel Nevada
P.O. Box 98521, M/S NTS273
Las Vegas, NV 89193-8521
ATTN: Dave Madsen

PROJECT NAME: V870
PROJECT NUMBER: 17777

NEL ORDER ID: L0008129

Attached are the analytical results for samples in support of the above referenced project.

Samples submitted for this project were not sampled by NEL Laboratories. Samples were received by NEL in good condition, under chain of custody on 8/10/00.

Should you have any questions or comments, please feel free to contact our Client Services department at (702) 657-1010.

Stan Van Wagenen
Laboratory Manager

8/15/00
Date

CERTIFICATIONS:

	Reno	Las Vegas	S. California
Arizona	AZ0520	AZ0518	AZ0605
California	1707	2002	2264
US Army Corps of Engineers	Certified	Certified	

	Reno	Las Vegas	S. California
Idaho	Certified	Certified	
Montana	Certified	Certified	
Nevada	NV033	NV052	CA084
L.A.C.S.D.			10228

CLIENT: Bechtel Nevada
PROJECT ID: V870
PROJECT #: 17777

TEST: Total Extractable Petroleum Hydrocarbons by EPA Method 8015M, December 1996
METHOD: EPA 8015M
ORDER ID: L0008129
MATRIX: Solid

ANALYST: SLB - Las Vegas Division

CLIENT SAMPLE ID	SAMPLE DATE	NEL SAMPLE ID	RESULT mg/kg	C.R.	Reporting Limit	Surrogate Recovery*	EXTRACTED	ANALYZED
UCISV6	8/9/00	L0008129-01	ND	ND	20. mg/kg	85 %	8/11/00	8/11/00

C.R.: Carbon Range

QUALITY CONTROL DATA (Total for Diesel Range):

Sample ID	Result	Acceptable Range	Surrogate Recovery*	Sample Number
Blank, 000811TP -BLK	ND	< 20 mg/kg	81 %	NA
LCS, 000811TPHS-LCS	68 %	54 - 91 %	78 %	NA
LCSD, 000811TPHS-LCSD	65 %	54 - 91 %	78 %	NA
MS, 000811TPHS-MS	79 %	34 - 110 %	93 %	L0008118-03
MSD, 000811TPHS-MSD	74 %	34 - 110 %	88 %	L0008118-03

*** Surrogate used was Octacosane, acceptance limits 55-130%.**

ND - Not Detected

Bechtel Nevada

ANALYTICAL SERVICES LABORATORY

SERVICES REQUEST & CHAIN OF CUSTODY RECORD

PROJECT/ CLIENT INFORMATION

Project: CNTA 2000 Closure BN Org#: 2152

Charge No.: C8GØ14AC ASL Prog.:

Project Manager: Wayne Johnson

Phone: 295-0573 Fax: 295-7761 M/S: NTS 306

REPORT INFORMATION

Send Report to: Dave Madsen

Phone: 295-7211 Fax: 295-7761 M/S: NTS306

Turnaround: ( ) Standard - 30 days Non-rad, 60 Days Rad, Other: ______ (X) Rush Preliminary by: 8/15/00 Final by: ______

Final report format: ( ) Standard ( ) NTS-WAC ( ) Other: ______

SAMPLE INFORMATION

Sampling Site: CNTA UC-1 Area S

The samples submitted contain (check): ( ) Hazardous ( ) Radioactive (X) Unknown contamination. If known, attach a brief narrative summary identifying contaminants. This information will ensure compliance with applicable regulations and allow for the safe handling of the sample materials.

LAB USE ONLY

Rad SGD: Non-Rad SDG: V870

Rad Packet: Non-Rad Packet: W1914

Client Services Representative:

Will these analyses be performed under a signed SOW? ( ) YES ( ) NO

If so, do analyses entered here agree with the SOW? ( ) YES ( ) NO ( ) N/A

If not, identify the variation ______

CSR initials indicating review and approval: ______ Date: ______

ANALYSES & METHOD

8/15
L0008129
[handwritten initials] ✓

ITEM	ID / DESCRIPTION	SAMPLING DATE	SAMPLING TIME	MATRIX	TPH
01 0	UC1SV6	8/8/00	1305	Soil	✓
1					
2					
3					
4					
5					
6					
7					
8					
9					

SAMPLE RECEIPT INFORMATION

Are all sample containers received intact (X) Yes ( ) No
Comments:

Do the labels agree with this form? (X) Yes ( ) No
Comments:

Was a Material Clearance Tag submitted? (X) Yes ( ) No
Comments:

COMMENTS
(Preservative, size/volume, MS/MSD, special analysis, rad matrix code, count time, etc.)

Samples on Ice. No rad content
From CNTA -non Rad Area

Custody Seal Intact: Y N None Temp: 6°C
Condition when received: Poor Good (circled)

Transfer of samples submitted for analyses

Sampled/Relinquished (Signature/Organization)	DATE / TIME	Received by (Signature/Organization)
Ken B. Campbell BNER	8/9/00 1348	[signature] BNER
[signature] BNER	8/10/00 0840	[signature] BNER
[signature] BN/ER	8/10/00 08??	C D Castaneda

Complete for samples shipped to an OFF-SITE Subcontract Laboratory NEL

Relinquished (BN Representative Signature)	DATE / TIME	Received (Courier & Tracking Info.)
C D Castaneda	8/10/00 1300	BN COURIER
Relinquished (Courier & Tracking Info.)	**DATE / TIME**	**Received (1st tier Subcontractor Rep)**
Via Courier	8-10-00 1330	[signature]
Relinquished (1st tier Subcontractor Rep)	**DATE / TIME**	**Received (2nd tier Subcontractor Rep)**

Distribution: Original - To be retained by laboratory performing final analysis
Copy 1 - To be retained by laboratory performing intermediate analysis

BN-0732 (02/98)

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Phoenix • Boise

Las Vegas Division
4208 Arcata Way, Suite A • Las Vegas, Nevada 89030
702-657-1010 • Fax: 702-657-1577
1-888-368-3282

CLIENT: Bechtel Nevada
P.O. Box 98521, M/S NTS273
Las Vegas, NV 89193-8521
ATTN: Dave Madsen

PROJECT NAME: V884
PROJECT NUMBER: 17777

NEL ORDER ID: L0008325

Attached are the analytical results for samples in support of the above referenced project.

Samples submitted for this project were not sampled by NEL Laboratories. Samples were received by NEL in good condition, under chain of custody on 8/28/00.

Should you have any questions or comments, please feel free to contact our Client Services department at (702) 657-1010.

Stan Van Wagenen
Laboratory Manager

8/2/01 Reissue
Date

CERTIFICATIONS:

	Reno	Las Vegas	S. California
Arizona	AZ0520	AZ0518	AZ0605
California	1707	2002	2264
US Army Corps of Engineers	Certified	Certified	

	Reno	Las Vegas	S. California
Idaho	Certified	Certified	
Montana	Certified	Certified	
Nevada	NV033	NV052	CA084
L.A.C.S.D.			10228

CLIENT:	Bechtel Nevada	CLIENT ID:	UCIYV1
PROJECT ID:	V884	DATE SAMPLED:	8/25/00
PROJECT #:	17777	NEL SAMPLE ID:	L0008325-01

TEST:	**Total Extractable Petroleum Hydrocarbons Fuel Finger Print by EPA Method 8015M, July 1992**		
METHOD:	EPA 8015M	ANALYST:	JRW - Las Vegas Division
MATRIX:	Solid	EXTRACTED:	8/29/00
DILUTION:	1	ANALYZED:	8/29/00

PARAMETER	Result		Reporting Limit
Gasoline Range (C8-C12)	ND		10. mg/kg
Diesel Range (C12-C22)	39	mg/kg	10. mg/kg
Oil Range (C22-C34)	ND		50. mg/kg
Total	39	mg/kg	10. mg/kg

QUALITY CONTROL DATA:

Surrogate	% Recovery	Acceptable Range
Octacosane	96	54 - 130

ND - Not Detected

CLIENT:	Bechtel Nevada	CLIENT ID:	UCIYV2
PROJECT ID:	V884	DATE SAMPLED:	8/25/00
PROJECT #:	17777	NEL SAMPLE ID:	L0008325-02
TEST:	**Total Extractable Petroleum Hydrocarbons Fuel Finger Print by EPA Method 8015M, July 1992**		
METHOD:	EPA 8015M	ANALYST:	JRW - Las Vegas Division
MATRIX:	Solid	EXTRACTED:	8/29/00
DILUTION:	1	ANALYZED:	8/29/00

PARAMETER	Result		Reporting Limit
Gasoline Range (C8-C12)	38	mg/kg	10. mg/kg
Diesel Range (C12-C22)	ND		10. mg/kg
Oil Range (C22-C34)	69	mg/kg	50. mg/kg
Total	107	mg/kg	10. mg/kg

QUALITY CONTROL DATA:

Surrogate	% Recovery	Acceptable Range
Octacosane	106	54 - 130

ND - Not Detected

CLIENT:	Bechtel Nevada	CLIENT ID:	**Method Blank**
PROJECT ID:	V884	DATE SAMPLED:	NA
PROJECT #:	17777	NEL SAMPLE ID:	000828TPHS-FP1-BLK
TEST:	**Total Extractable Petroleum Hydrocarbons Fuel Finger Print by EPA Method 8015M, July 1992**		
METHOD:	EPA 8015M	ANALYST:	JRW - Las Vegas Division
MATRIX:	Solid	EXTRACTED:	8/29/00
		ANALYZED:	8/29/00

PARAMETER	Result	Reporting Limit
Gasoline Range (C8-C12)	ND	10. mg/kg
Diesel Range (C12-C22)	ND	10. mg/kg
Oil Range (C22-C34)	ND	50. mg/kg
Total	ND	10. mg/kg

QUALITY CONTROL DATA:

Surrogate	% Recovery	Acceptable Range
Octacosane	93	54 - 130

ND - Not Detected

Bechtel Nevada 8/30

ANALYTICAL SERVICES LABORATORY
SERVICES REQUEST & CHAIN OF CUSTODY RECORD

0008325 Page 1 of 1

PROJECT/ CLIENT INFORMATION

Project: CNTA 2000 Closure BN Org#: 2152
Charge No.: C8G014AC ASL Prog.: ERD1340
Project Manager: Wayne Johnson
Phone: 295-0573 Fax: 295-7761 M/S: NTS306

REPORT INFORMATION

Send Report to: Dave Madsen
Phone: 295-7211 Fax: 295-7761 M/S: NTS306
Turnaround: ( ) Standard - 30 days Non-rad, 60 Days Rad, Other:
(X) Rush Preliminary by: 48 hours → Final by: 8/30/00
Final report format: ( ) Standard ( ) NTS-WAC ( ) Other:

SAMPLE INFORMATION

Sampling Site: UC-1 Area 4
The samples submitted contain (check):
( ) Hazardous ( ) Radioactive (X) Unknown
contamination. If known, attach a brief narrative summary identifying contaminants. This information will ensure compliance with applicable regulations and allow for the safe handling of the sample materials.

LAB USE ONLY

Rad SGD: Non-Rad SDG: V884
Rad Packet: Non-Rad Packet: W1928
Client Services Representative:

Will these analyses be performed under a signed SOW? ( ) YES ( ) NO
If so, do analyses entered here agree with the SOW? ( ) YES ( ) NO ( ) N/A
If not, identify the variation
CSR initials indicating review and approval: Date:

ANALYSES & METHOD

ITEM	ID / DESCRIPTION	SAMPLING DATE	SAMPLING TIME	MATRIX	TPH (Gas, Oil, Diesel)
0	UC1YU1	8/25/00	1108	Soil	✓
1	UC1YU2	8/25/00	1112	Soil	✓
2					
3					
4					
5					
6					
7					
8					
9					

SAMPLE RECEIPT INFORMATION

Are all sample containers received intact (X) Yes ( ) No
Comments:

Do the labels agree with this form? (X) Yes ( ) No
Comments:

Was a Material Clearance Tag submitted? (X) Yes ( ) No
Comments:

COMMENTS
(Preservative, size/volume, MS/MSD, special analysis, rad matrix code, count time, etc.)

Sample placed on ice
" "

COURIER

Transfer of samples submitted for analyses

Sampled/Relinquished (Signature/Organization)	DATE / TIME	Received by (Signature/Organization)
Kevin Cambell BN.	8/28/00 16:12	Paul F Brown
Paul F Brown BN/ERS	8/28/00 2336	M. L. Floyd
M. L. Floyd	8/29/00 0811	C Castaneda

Complete for samples shipped to an OFF-SITE Subcontract Laboratory NEL

Relinquished (BN Representative Signature)	DATE / TIME	Received (Courier & Tracking Info.)
C.D. Castaneda	8/30/00 1300	BN COURIER
Relinquished (Courier & Tracking Info.)	DATE / TIME	Received (1st tier Subcontractor Rep)
Relinquished (1st tier Subcontractor Rep)	DATE / TIME	Received (2nd tier Subcontractor Rep)

Distribution: Original - To be retained by laboratory performing final analysis
Copy 1 - To be retained by laboratory performing intermediate analysis
Copy 2 - To be retained by Analytical Services Laboratory

BN-0732 (02/98)

NEL LABORATORIES
Reno • Las Vegas • Boise
Phoenix • Sacramento

Las Vegas Divisi
4208 Arcata Way, Suite A • Las Vegas, NV 890
(702) 657-1010 • Fax: (702) 657-15
1-888-368-32

CLIENT: Bechtel Nevada
P.O. Box 98521, M/S NTS273
Las Vegas, NV 89193-8521
ATTN: Dave Madsen

PROJECT NAME: NA 506886
PROJECT NUMBER: 17777

NEL ORDER ID: L0009010

Attached are the analytical results for samples in support of the above referenced project.

Samples submitted for this project were not sampled by NEL Laboratories. Samples were received by NEL in good condition, under chain of custody on 9/1/00.

Should you have any questions or comments, please feel free to contact our Client Services department at (702) 657-1010.

Stan Van Wagenen
Laboratory Manager

9/6/00
Date

CERTIFICATIONS:

	Reno	Las Vegas	S. California
Arizona	AZ0520	AZ0518	AZ0605
California	1707	2002	2264
US Army Corps of Engineers	Certified	Certified	

	Reno	Las Vegas	S. California
Idaho	Certified	Certified	
Montana	Certified	Certified	
Nevada	NV033	NV052	CA084
L.A.C.S.D.			10228

CLIENT: Bechtel Nevada
PROJECT ID: NA
PROJECT #: 17777

TEST: Total Extractable Petroleum Hydrocarbons by EPA Method 8015M, December 1996
METHOD: EPA 8015M
ORDER ID: L0009010
MATRIX: Solid
ANALYST: SLB - Las Vegas Division

CLIENT SAMPLE ID	SAMPLE DATE	NEL SAMPLE ID	RESULT mg/kg	C.R.	Reporting Limit	Surrogate Recovery*	EXTRACTED	ANALYZED
UC1YV3	8/31/00	L0009010-01	ND	ND	20. mg/kg	95 %	9/5/00	9/5/00

C.R.: Carbon Range

QUALITY CONTROL DATA (Total for Diesel Range):

Sample ID	Result	Acceptable Range	Surrogate Recovery*	Sample Number
Blank, 000905TP -BLK	ND	< 20 mg/kg	107 %	NA
LCS, 000905TPHS-LCS	85 %	54 - 91 %	92 %	NA
LCSD, 000905TPHS-LCSD	83 %	54 - 91 %	101 %	NA
MS, 000905TPHS-MS	84 %	34 - 110 %	91 %	L0009010-01
MSD, 000905TPHS-MSD	82 %	34 - 110 %	93 %	L0009010-01

*** Surrogate used was Octacosane, acceptance limits 55-130%.**

ND - Not Detected

10009010

Bechtel Nevada

ANALYTICAL SERVICES LABORATORY

SERVICES REQUEST & CHAIN OF CUSTODY RECORD

Page 1 of 1

PROJECT/ CLIENT INFORMATION

Project: CNTA 2000 | BN Org#: 2152
Charge No.: C8G014AC | ASL Prog.:
Project Manager: Wayne Johnson
Phone: 295-0573 | Fax: 295-7761 | M/S: NTS306

REPORT INFORMATION

Send Report to: Dave Madsen
Phone: 295-7211 | Fax: 295-7761 | M/S: NTS306
Turnaround: ( ) Standard - 30 days Non-rad, 60 Days Rad, Other: ____
(X) Rush Preliminary by: 48 hr. Final by: ____
Final report format: ( ) Standard ( ) NTS-WAC ( ) Other: ____

SAMPLE INFORMATION

Sampling Site: UC-1 Area Y
The samples submitted contain (check);
( ) Hazardous ( ) Radioactive (X) Unknown contamination. If known, attach a brief narrative summary identifying contaminants. This information will ensure compliance with applicable regulations and allow for the safe handling of the sample materials.

LAB USE ONLY

Rad SGD: | Non-Rad SDG:
Rad Packet: | Non-Rad Packet:
Client Services Representative:

Will these analyses be performed under a signed SOW? ( ) YES ( ) NO
If so, do analyses entered here agree with the SOW? ( ) YES ( ) NO ( ) N/A
If not, identify the variation ____
CSR initials indicating review and approval: ____ Date: ____

ANALYSES & METHOD

TPH 9/6

ITEM	ID / DESCRIPTION	SAMPLING DATE	SAMPLING TIME	MATRIX	
0	UC1YV5	8/31/00	1122	SOIL	V
1					
2					
3					
4					
5					
6					
7					
8					
9					

SAMPLE RECEIPT INFORMATION

Are all sample containers received intact ( ) Yes ( ) No
Comments: ____

Do the labels agree with this form? ( ) Yes ( ) No
Comments: ____

Was a Material Clearance Tag submitted? ( ) Yes ( ) No
Comments: ____

COMMENTS
(Preservative, size/volume, MS/MSD, special analysis, rad matrix code, count time, etc.)

Sample on ice

Custody Seal Intact: Y N None Temp: 2°C
Condition when received: Poor Good

Transfer of samples submitted for analyses

Sampled/Relinquished (Signature/Organization)	DATE / TIME	Received by (Signature/Organization)
Kim B. Campbell BNER	9/6/00 1647	NPUCY

Complete for samples shipped to an OFF-SITE Subcontract Laboratory

Relinquished (BN Representative Signature)	DATE / TIME	Received (Courier & Tracking Info.)
Relinquished (Courier & Tracking Info.)	**DATE / TIME**	**Received (1st tier Subcontractor Rep)**
Relinquished (1st tier Subcontractor Rep)	**DATE / TIME**	**Received (2nd tier Subcontractor Rep)**

Distribution: Original - To be retained by laboratory performing final analysis
Copy 1 - To be retained by laboratory performing intermediate analysis

NEL LABORATORIES
Reno • Las Vegas • Boise
Phoenix • Sacramento

Las Vegas Divisio
4208 Arcata Way, Suite A • Las Vegas, NV 8903
(702) 657-1010 • Fax: (702) 657-157
1-888-368-328

CLIENT: Bechtel Nevada
P.O. Box 98521, M/S NTS273
Las Vegas, NV 89193-8521
ATTN: Dave Madsen

PROJECT NAME: CNTA ~~Closhier~~ Closure SOG VB84
PROJECT NUMBER: 2152

NEL ORDER ID: L0008076

Attached are the analytical results for samples in support of the above referenced project.

Samples submitted for this project were not sampled by NEL Laboratories. Samples were received by NEL in good condition, under chain of custody on 8/7/00.

Should you have any questions or comments, please feel free to contact our Client Services department at (702) 657-1010.

Stan Van Wagenen
Laboratory Manager

8/9/00
Date

CERTIFICATIONS:

	Reno	Las Vegas	S. California
Arizona	AZ0520	AZ0518	AZ0605
California	1707	2002	2264
US Army Corps of Engineers	Certified	Certified	

	Reno	Las Vegas	S. California
Idaho	Certified	Certified	
Montana	Certified	Certified	
Nevada	NV033	NV052	CA084
L.A.C.S.D.			10228

CLIENT: Bechtel Nevada
PROJECT ID: CNTA Closhler
PROJECT #: 2152

TEST: Total Extractable Petroleum Hydrocarbons by EPA Method 8015M, December 1996
METHOD: EPA 8015M
ORDER ID: L0008076
MATRIX: Solid

ANALYST: SLB - Las Vegas Division

CLIENT SAMPLE ID	SAMPLE DATE	NEL SAMPLE ID	RESULT mg/kg	C.R.	Reporting Limit	Surrogate Recovery*	EXTRACTED	ANALYZED
UC3ZV1	8/3/00	L0008076-01	ND	ND	20. mg/kg	83 %	8/7/00	8/8/00
UC3ZV2	8/3/00	L0008076-02	ND	ND	20. mg/kg	86 %	8/7/00	8/8/00
UC3ZV3	8/3/00	L0008076-03	ND	ND	20. mg/kg	78 %	8/7/00	8/8/00
UC3ZV4	8/3/00	L0008076-04	ND	ND	20. mg/kg	88 %	8/7/00	8/8/00
UC3ZV5	8/3/00	L0008076-05	ND	ND	20. mg/kg	88 %	8/7/00	8/8/00
UC3ZV6	8/3/00	L0008076-06	ND	ND	20. mg/kg	63 %	8/7/00	8/8/00

C.R.: Carbon Range

QUALITY CONTROL DATA (Total for Diesel Range):

Sample ID	Result	Acceptable Range	Surrogate Recovery*	Sample Number
Blank, 000807TP -BLK	ND	< 20 mg/kg	83 %	NA
LCS, 000807TPHS-LCS	77 %	54 - 91 %	81 %	NA
LCSD, 000807TPHS-LCSD	73 %	54 - 91 %	93 %	NA

*** Surrogate used was Octacosane, acceptance limits 55-130%.**

ND - Not Detected

00080710 014

'00 AUG 07 08:01

Bechtel Nevada

ANALYTICAL SERVICES LABORATORY
SERVICES REQUEST & CHAIN OF CUSTODY RECORD

Page 1 of ___

PROJECT/ CLIENT INFORMATION

Project: CNTA Closure | BN Org#: 2152
Charge No.: C86014AC | ASL Prog.:
Project Manager: Wayne Johson
Phone: 295-0573 | Fax: 295-7761 | M/S: NTS 306

REPORT INFORMATION

Send Report to: Dave Madsen
Phone: 295-7211 | Fax: 295-7761 | M/S: NTS 306
Turnaround: ( ) Standard - 30 days Non-rad, 60 Days Rad, Other: ___
(X) Rush Preliminary by: 48 hrs Final by: ___
Final report format: (X) Standard ( ) NTS-WAC ( ) Other: ___

SAMPLE INFORMATION

Sampling Site: CNTA UC-3 Area 2
The samples submitted contain (check):
( ) Hazardous ( ) Radioactive (X) Unknown contamination. If known, attach a brief narrative summary identifying contaminants. This information will ensure compliance with applicable regulations and allow for the safe handling of the sample materials.

LAB USE ONLY

Rad SGD: | Non-Rad SDG: V864
Rad Packet: | Non-Rad Packet: W1908
Client Services Representative:

Will these analyses be performed under a signed SOW? ( ) YES ( ) NO
If so, do analyses entered here agree with the SOW? ( ) YES ( ) NO ( ) N/A
If not, identify the variation ___
CSR initials indicating review and approval: ___ Date: ___

ANALYSES & METHOD

ITEM	ID / DESCRIPTION	SAMPLING DATE	SAMPLING TIME	MATRIX	TPH (Diesel, waste oil)
01 0	UC3ZV1	8/3/00	1250	soil	✓
02 1	UC3ZV2	8/3/00	1255		✓
03 2	UC3ZV3	8/3/00	1258		✓
04 3	UC3ZV4	8/3/00	1303		✓
05 4	UC3ZV5	8/3/00	1323		✓
06 5	UC3ZV6	8/3/00	1309		✓
6		8/3/00			✓
7					
8					
9					

last line

SAMPLE RECEIPT INFORMATION

Are all sample containers received intact (X) Yes ( ) No
Comments: ___

Do the labels agree with this form? (X) Yes ( ) No
Comments: ___

Was a Material Clearance Tag submitted? (X) Yes ( ) No
Comments: ___

COMMENTS
(Preservative, size/volume, MS/MSD, special analysis, rad matrix code, count time, etc.)

Samples on ice
SAMPLES FROM NON-RAD AREA CNTA

Transfer of samples submitted for analyses

Sampled/Relinquished (Signature/Organization)	DATE / TIME	Received by (Signature/Organization)
Karen Campbell BNER	8/3/00 1616	Paul Brown
Paul Brown BNER	8/7/00 0838	CM Lloyd
CM Lloyd BNER	8/7/00 0900	D Burns

Complete for samples shipped to an OFF-SITE Subcontract Laboratory NEL

Relinquished (BN Representative Signature)	DATE / TIME	Received (Courier & Tracking Info.)
CN Castaneda for EB	8/7/00 1300	BN Courier
Relinquished (Courier & Tracking Info.)	DATE / TIME	Received (1st tier Subcontractor Rep)
Relinquished (1st tier Subcontractor Rep)	DATE / TIME	Received (2nd tier Subcontractor Rep)

Distribution: Original - To be retained by laboratory performing final analysis
Copy 1 - To be retained by laboratory performing intermediate analysis

BN-0732 (02/98)

NEL LABORATORIES
Reno • Las Vegas
Phoenix • Boise

Las Vegas Division
4208 Arcata Way, Suite A • Las Vegas, Nevada 89030
702-657-1010 • Fax: 702-657-1577
1-888-368-3282

CLIENT: Bechtel Nevada
P.O. Box 98521, M/S NTS273
Las Vegas, NV 89193-8521
ATTN: Ted Redding

PROJECT NAME: NA
PROJECT NUMBER: 17777

NEL ORDER ID: L0008188

Attached are the analytical results for samples in support of the above referenced project.

Samples submitted for this project were not sampled by NEL Laboratories. Samples were received by NEL in good condition, under chain of custody on 8/17/00.

Should you have any questions or comments, please feel free to contact our Client Services department at (702) 657-1010.

Sample UC4SV5 has peaks below the reporting limit eluting in the Diesel/Oil range. The peaks do not resemble either Diesel or Oil.

Stan Van Wagenen
Laboratory Manager

8/21/01 Re-Issue
Date

CERTIFICATIONS:

	Reno	Las Vegas	S. California
Arizona	AZ0520	AZ0518	AZ0605
California	1707	2002	2264
US Army Corps of Engineers	Certified	Certified	

	Reno	Las Vegas	S. California
Idaho	Certified	Certified	
Montana	Certified	Certified	
Nevada	NV033	NV052	CA084
L.A.C.S.D.			10228

CLIENT:	Bechtel Nevada	CLIENT ID:	UC4SV1
PROJECT ID:	NA	DATE SAMPLED:	8/16/00
PROJECT #:	17777	NEL SAMPLE ID:	L0008188-01
TEST:	**Total Extractable Petroleum Hydrocarbons Fuel Finger Print by EPA Method 8015M, July 1992**		
METHOD:	EPA 8015M	ANALYST:	SLB - Las Vegas Division
MATRIX:	Solid	EXTRACTED:	8/17/00
DILUTION:	1	ANALYZED:	8/18/00

PARAMETER	Result	Reporting Limit
Gasoline Range (C8-C12)	ND	10. mg/kg
Diesel Range (C12-C22)	ND	10. mg/kg
Oil Range (C22-C34)	ND	50. mg/kg
Total	ND	10. mg/kg

QUALITY CONTROL DATA:

Surrogate	% Recovery	Acceptable Range
Octacosane	83	54 - 130

ND - Not Detected

CLIENT:	Bechtel Nevada	CLIENT ID:	UC4SV2
PROJECT ID:	NA	DATE SAMPLED:	8/16/00
PROJECT #:	17777	NEL SAMPLE ID:	L0008188-02

TEST: **Total Extractable Petroleum Hydrocarbons Fuel Finger Print by EPA Method 8015M, July 1992**

METHOD:	EPA 8015M	ANALYST:	SLB - Las Vegas Division
MATRIX:	Solid	EXTRACTED:	8/17/00
DILUTION:	1	ANALYZED:	8/18/00

PARAMETER	Result		Reporting Limit
Gasoline Range (C8-C12)	ND		10. mg/kg
Diesel Range (C12-C22)	31	mg/kg	10. mg/kg
Oil Range (C22-C34)	ND		50. mg/kg
Total	31	mg/kg	10. mg/kg

QUALITY CONTROL DATA:

Surrogate	% Recovery	Acceptable Range
Octacosane	76	54 - 130

ND - Not Detected

CLIENT:	Bechtel Nevada	CLIENT ID:	UC4SV3
PROJECT ID:	NA	DATE SAMPLED:	8/16/00
PROJECT #:	17777	NEL SAMPLE ID:	L0008188-03

TEST: **Total Extractable Petroleum Hydrocarbons Fuel Finger Print by EPA Method 8015M, July 1992**

METHOD:	EPA 8015M	ANALYST:	SLB - Las Vegas Division
MATRIX:	Solid	EXTRACTED:	8/17/00
DILUTION:	1	ANALYZED:	8/18/00

PARAMETER	Result	Reporting Limit
Gasoline Range (C8-C12)	ND	10. mg/kg
Diesel Range (C12-C22)	ND	10. mg/kg
Oil Range (C22-C34)	ND	50. mg/kg
Total	ND	10. mg/kg

QUALITY CONTROL DATA:

Surrogate	% Recovery	Acceptable Range
Octacosane	83	54 - 130

ND - Not Detected

CLIENT:	Bechtel Nevada	CLIENT ID:	UC4SV4
PROJECT ID:	NA	DATE SAMPLED:	8/16/00
PROJECT #:	17777	NEL SAMPLE ID:	L0008188-04

TEST:	**Total Extractable Petroleum Hydrocarbons Fuel Finger Print by EPA Method 8015M, July 1992**		
METHOD:	EPA 8015M	ANALYST:	SLB - Las Vegas Division
MATRIX:	Solid	EXTRACTED:	8/17/00
DILUTION:	1	ANALYZED:	8/18/00

PARAMETER	Result	Reporting Limit
Gasoline Range (C8-C12)	ND	10. mg/kg
Diesel Range (C12-C22)	ND	10. mg/kg
Oil Range (C22-C34)	ND	50. mg/kg
Total	ND	10. mg/kg

QUALITY CONTROL DATA:

Surrogate	% Recovery	Acceptable Range
Octacosane	81	54 - 130

ND - Not Detected

CLIENT:	Bechtel Nevada	CLIENT ID:	UC4SV5
PROJECT ID:	NA	DATE SAMPLED:	8/16/00
PROJECT #:	17777	NEL SAMPLE ID:	L0008188-05
TEST:	**Total Extractable Petroleum Hydrocarbons Fuel Finger Print by EPA Method 8015M, July 1992**		
METHOD:	EPA 8015M	ANALYST:	SLB - Las Vegas Division
MATRIX:	Solid	EXTRACTED:	8/17/00
DILUTION:	1	ANALYZED:	8/18/00

PARAMETER	Result	Reporting Limit
Gasoline Range (C8-C12)	ND	10. mg/kg
Diesel Range (C12-C22)	ND	10. mg/kg
Oil Range (C22-C34)	ND	50. mg/kg
Total	ND	10. mg/kg

QUALITY CONTROL DATA:

Surrogate	% Recovery	Acceptable Range
Octacosane	85	54 - 130

ND - Not Detected

CLIENT:	Bechtel Nevada	CLIENT ID:	**Method Blank**
PROJECT ID:	NA	DATE SAMPLED:	NA
PROJECT #:	17777	NEL SAMPLE ID:	000817TPHS-FP-BLK

TEST: **Total Extractable Petroleum Hydrocarbons Fuel Finger Print by EPA Method 8015M, July 1992**

METHOD:	EPA 8015M	ANALYST:	SLB - Las Vegas Division
MATRIX:	Solid	EXTRACTED:	8/17/00
		ANALYZED:	8/18/00

PARAMETER	Result	Reporting Limit
Gasoline Range (C8-C12)	ND	10. mg/kg
Diesel Range (C12-C22)	ND	10. mg/kg
Oil Range (C22-C34)	ND	50. mg/kg
Total	ND	10. mg/kg

QUALITY CONTROL DATA:

Surrogate	% Recovery	Acceptable Range
Octacosane	80	54 - 130

ND - Not Detected

8/21 L00088188

Bechtel Nevada

ANALYTICAL SERVICES LABORATORY

SERVICES REQUEST & CHAIN OF CUSTODY RECORD

Page 1 of 1

PROJECT/ CLIENT INFORMATION

Project: CNTA 2000 Closure BN Org#: 2152
Charge No.: C8G014AC ASL Prog.:
Project Manager: Wayne Johnson
Phone: 295-0573 Fax: 295-7761 M/S: NTS 306

REPORT INFORMATION

Send Report to: Dave Medsen
Phone: 295-7211 Fax: 295-7761 M/S: NTS 306
Turnaround: ( ) Standard - 30 days Non-rad, 60 Days Rad, Other:_____
(X) Rush Preliminary by: 48 hours Final by:_____
Final report format: ( ) Standard ( ) NTS-WAC ( ) Other:_____

SAMPLE INFORMATION

Sampling Site: UC-4 Area 5
The samples submitted contain (check);
( ) Hazardous ( ) Radioactive (X) Unknown contamination. If known, attach a brief narrative summary identifying contaminants. This information will ensure compliance with applicable regulations and allow for the safe handling of the sample materials.

LAB USE ONLY

Rad SGD: Non-Rad SDG: V877R
Rad Packet: Non-Rad Packet:
Client Services Representative:

Will these analyses be performed under a signed SOW? ( ) YES ( ) NO
If so, do analyses entered here agree with the SOW? ( ) YES ( ) NO ( ) N/A
If not, identify the variation _____
CSR initials indicating review and approval: _____ Date: _____

ANALYSES & METHOD

ITEM	ID / DESCRIPTION	SAMPLING DATE	SAMPLING TIME	MATRIX	TPH (Diesel, Waste Oil, Gasoline Fractions)
01	0 UC4SU1	8/16/00	1334	Soil	X
02	1 UC4SU2		1337		X
03	2 UC4SU3		1351		X
04	3 UC4SU4		1355		X
05	4 UC4SU5		1403		X
	5				
	6				
	7				
	8				
	9				

SAMPLE RECEIPT INFORMATION

Are all sample containers received intact ( ) Yes ( ) No
Comments:

Do the labels agree with this form? ( ) Yes ( ) No
Comments:

Was a Material Clearance Tag submitted? ( ) Yes ( ) No
Comments:

COMMENTS
(Preservative, size/volume, MS/MSD, special analysis, rad matrix code, count time, etc.)

Sample plates on ice
Need Copy of Chromatograph & analytical results for samples & standards.

Custody Seal Intact: Y N None Temp: 3°C
Condition when received: Poor Good

Transfer of samples submitted for analyses

Sampled/Relinquished (Signature/Organization)	DATE / TIME	Received by (Signature/Organization)
Kim Campbell BNER	8/17/00 0806	NEL

Complete for samples shipped to an OFF-SITE Subcontract Laboratory

Relinquished (BN Representative Signature)	DATE / TIME	Received (Courier & Tracking Info.)
Relinquished (Courier & Tracking Info.)	DATE / TIME	Received (1st tier Subcontractor Rep)
Relinquished (1st tier Subcontractor Rep)	DATE / TIME	Received (2nd tier Subcontractor Rep)

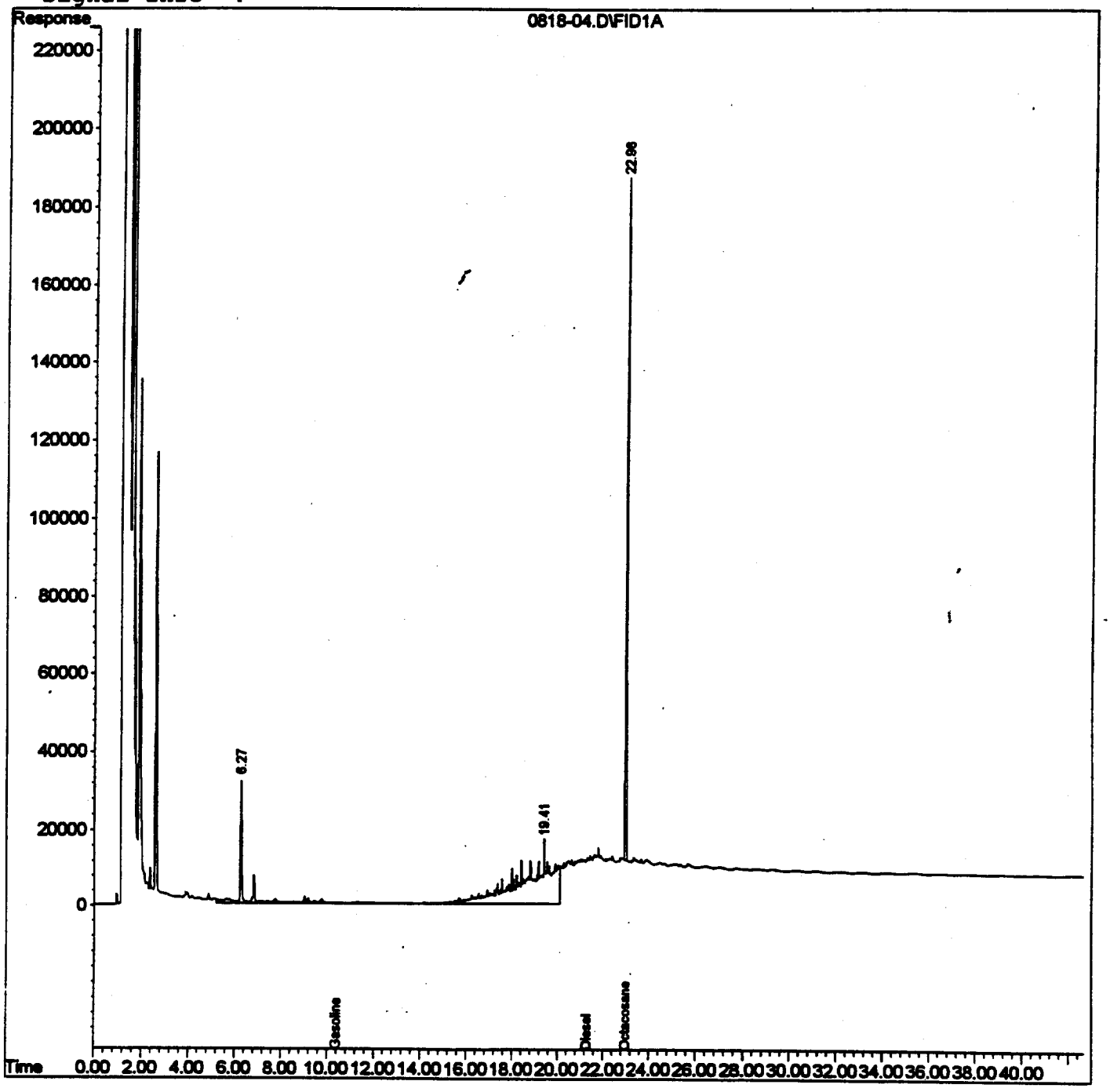
Distribution: Original - To be retained by laboratory performing final analysis
Copy 1 - To be retained by laboratory performing intermediate analysis

BN-0732 (02/98)

Data File : C:\HPCHE .2\DATA\000818\0818-04.D Vial: 43
Acq On : 18 Aug 20100 10:20 am Operator: JRW
Sample : L0008188-01 Inst : Seymour
Misc : SOIL SAMPLE Multiplr: 1.00
IntFile : events.e
Quant Time: Aug 21 13:01 2000 Quant Results File: TP0007F2.RES

Quant Method : C:\HPCHEM\2\METHODS\TP0007F2.M (Chemstation Integrator)
Title : 6/21/99 Seymour Front TPH
Last Update : Mon Jul 17 11:26:50 2000
Response via : Multiple Level Calibration
DataAcq Meth : TP9907R1.M

Volume Inj. :
Signal Phase :
Signal Info :

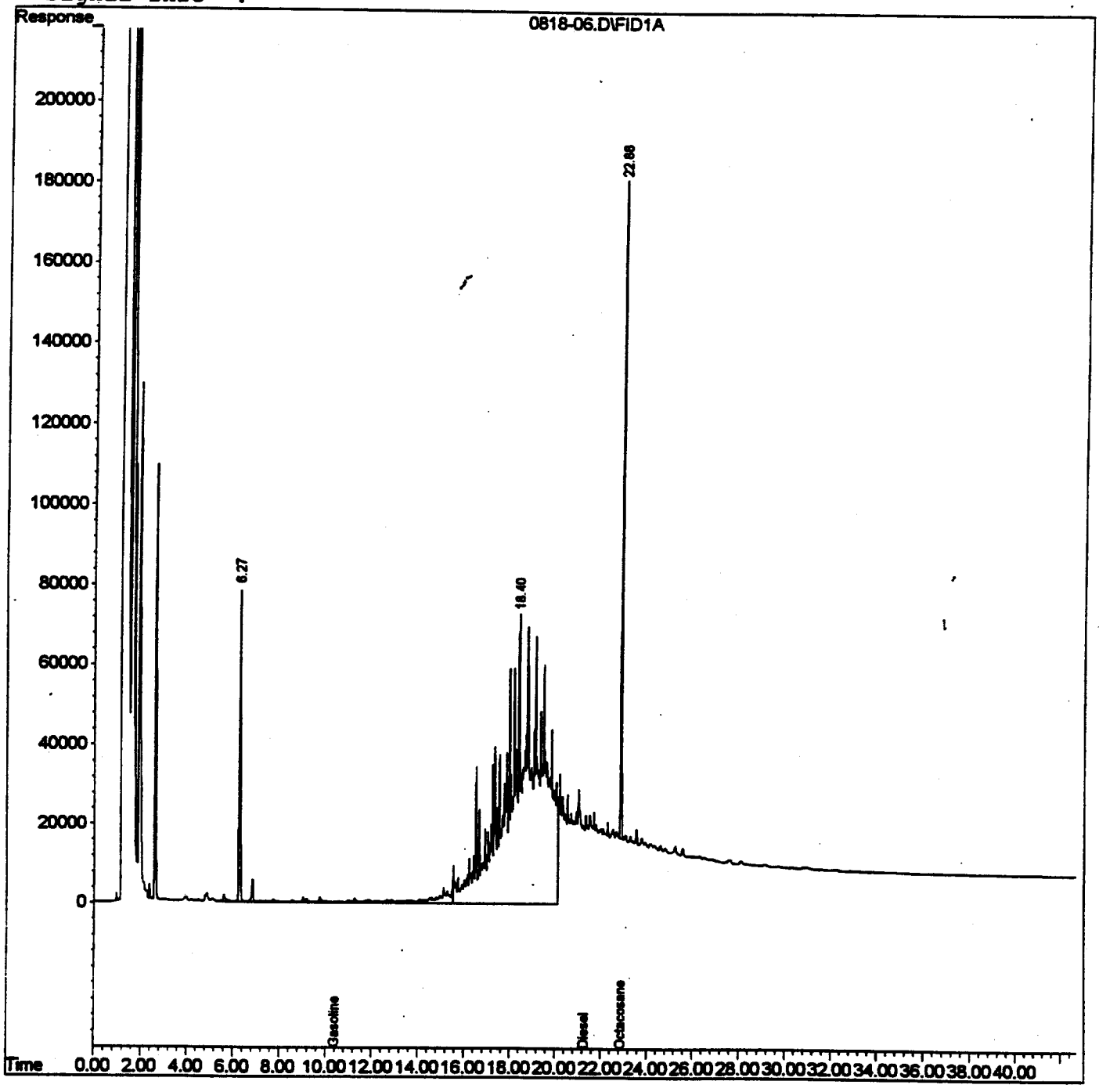


Data File : C:\HPCHE 2\DATA\000818\0818-06.D
Acq On : 18 Aug 20100 11:11 am
Sample : L0008188-02
Misc : SOIL SAMPLE
IntFile : events.e
Quant Time: Aug 21 13:05 2000 Quant Results File: TP0007F2.RES

Vial: 48
Operator: JRW
Inst : Seymour
Multiplr: 1.00

Quant Method : C:\HPCHEM\2\METHODS\TP0007F2.M (Chemstation Integrator)
Title : 6/21/99 Seymour Front TPH
Last Update : Mon Jul 17 11:26:50 2000
Response via : Multiple Level Calibration
DataAcq Meth : TP9907R1.M

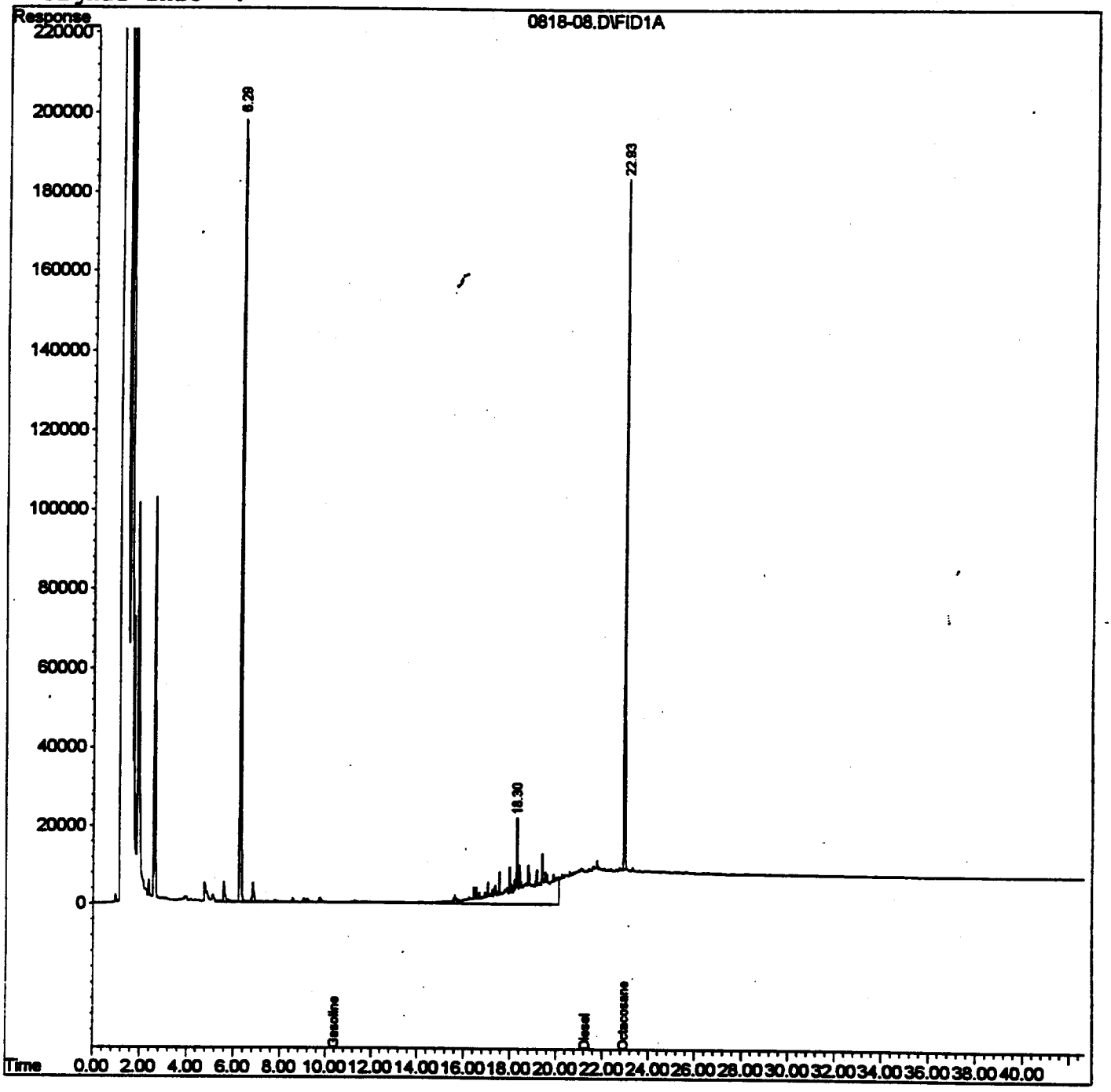
Volume Inj. :
Signal Phase :
Signal Info :



Data File : C:\HPCHE 2\DATA\000818\0818-08.D Vial: 49
Acq On : 18 Aug 20100 12:03 pm Operator: JRW
Sample : L0008188-03 Inst : Seymour
Misc : SOIL SAMPLE Multiplr: 1.00
IntFile : events.e
Quant Time: Aug 21 13:07 2000 Quant Results File: TP0007F2.RES

Quant Method : C:\HPCHEM\2\METHODS\TP0007F2.M (Chemstation Integrator)
Title : 6/21/99 Seymour Front TPH
Last Update : Mon Jul 17 11:26:50 2000
Response via : Multiple Level Calibration
DataAcq Meth : TP9907R1.M

Volume Inj. :
Signal Phase :
Signal Info :

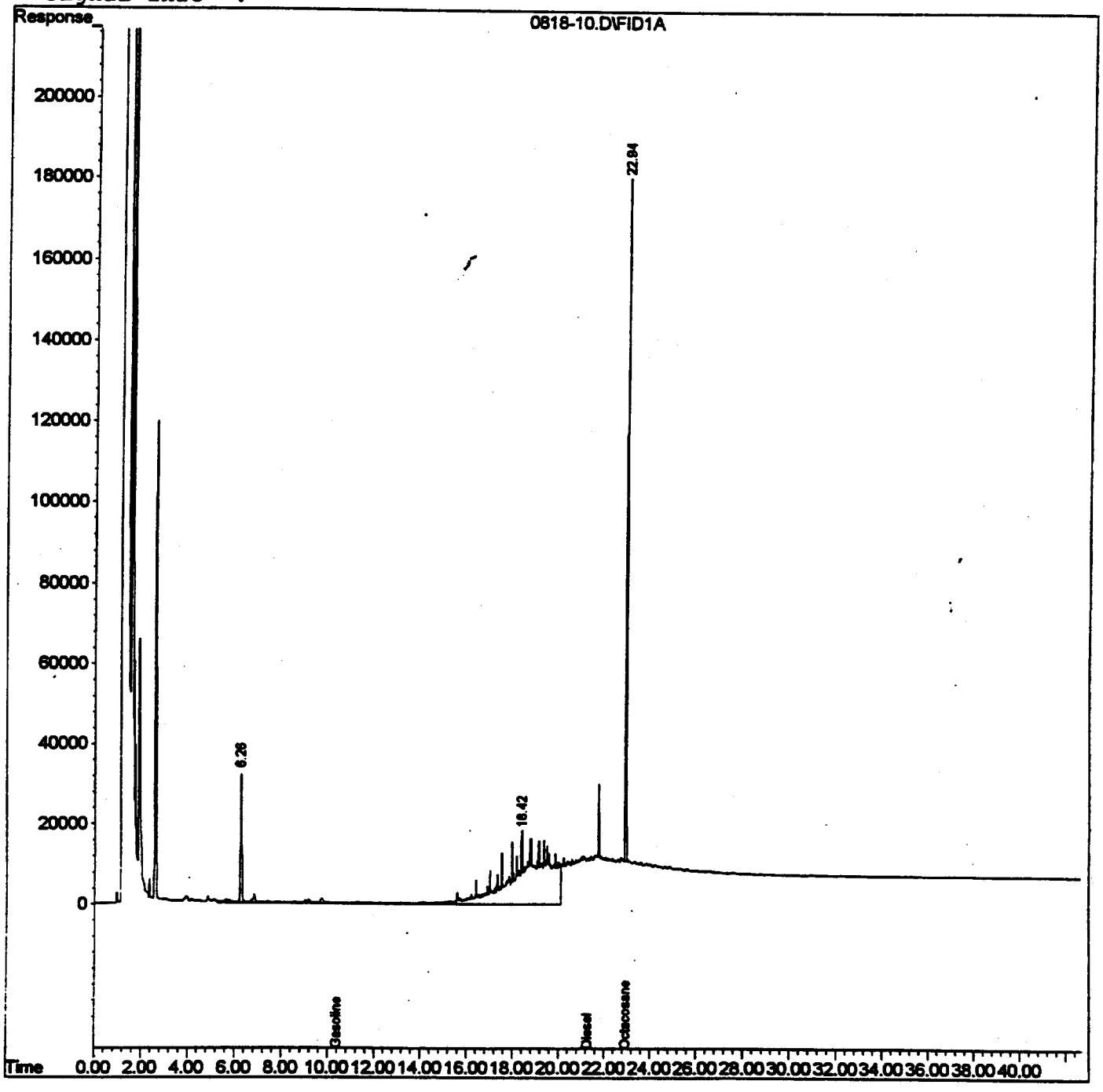


Data File : C:\HPCHEM\2\DATA\000818\0818-10.D
Acq On : 18 Aug 20100 12:55 pm
Sample : L0008188-04
Misc : SOIL SAMPLE
IntFile : events.e
Quant Time: Aug 21 13:10 2000 Quant Results File: TP0007F2.RES

Vial: 50
Operator: JRW
Inst : Seymour
Multiplr: 1.00

Quant Method : C:\HPCHEM\2\METHODS\TP0007F2.M (Chemstation Integrator)
Title : 6/21/99 Seymour Front TPH
Last Update : Mon Jul 17 11:26:50 2000
Response via : Multiple Level Calibration
DataAcq Meth : TP9907R1.M

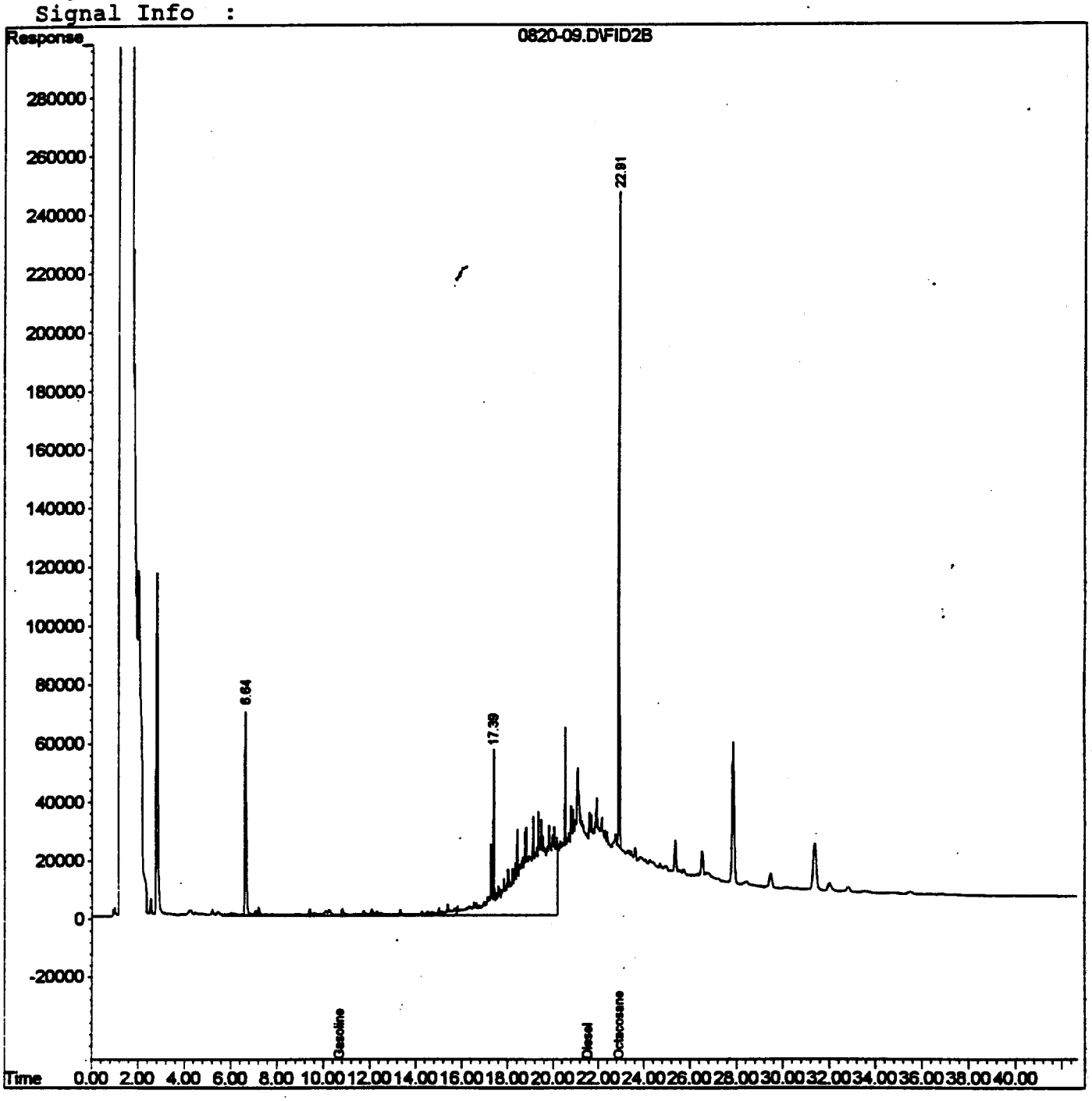
Volume Inj. :
Signal Phase :
Signal Info :



Data File : C:\HPCHEM\2\DATA\000820.SEC\0820-09.D Vial: 52
Acq On : 20 Aug 20100 10:55 pm Operator: JRW
Sample : L0008188-05 Inst : Seymour
Misc : SOIL SAMPLE Multiplr: 1.00
IntFile : events.e
Quant Time: Aug 21 12:07 2000 Quant Results File: TP0008R2.RES

Quant Method : C:\HPCHEM\2\METHODS\TP0008R2.M (Chemstation Integrator)
Title : 6/21/99 Seymour Front TPH
Last Update : Fri Aug 18 07:42:19 2000
Response via : Multiple Level Calibration
DataAcq Meth : TP9907R1.M

Volume Inj. :
Signal Phase :
Signal Info :



NEL LABORATORIES
Reno • Las Vegas
Phoenix • Boise

Las Vegas Division
4208 Arcata Way, Suite A • Las Vegas, Nevada 89030
702-657-1010 • Fax: 702-657-1577
1-888-368-3282

CLIENT: Bechtel Nevada
P.O. Box 98521, M/S NTS273
Las Vegas, NV 89193-8521
ATTN: Ted Redding

PROJECT NAME: V881
PROJECT NUMBER: 17777

NEL ORDER ID: L0008264

Attached are the analytical results for samples in support of the above referenced project.

Samples submitted for this project were not sampled by NEL Laboratories. Samples were received by NEL in good condition, under chain of custody on 8/23/00.

Should you have any questions or comments, please feel free to contact our Client Services department at (702) 657-1010.

Stan Van Wagenen
Laboratory Manager

8/25/01 re-issued
Date

CERTIFICATIONS:

	Reno	Las Vegas	S. California
Arizona	AZ0520	AZ0518	AZ0605
California	1707	2002	2264
US Army Corps of Engineers	Certified	Certified	

	Reno	Las Vegas	S. California
Idaho	Certified	Certified	
Montana	Certified	Certified	
Nevada	NV033	NV052	CA084
L.A.C.S.D.			10228

CLIENT:	Bechtel Nevada	CLIENT ID:	UC4SV6
PROJECT ID:	V881	DATE SAMPLED:	8/22/00
PROJECT #:	17777	NEL SAMPLE ID:	L0008264-01
TEST:	**Total Extractable Petroleum Hydrocarbons Fuel Finger Print by EPA Method 8015M, July 1992**		
METHOD:	EPA 8015M	ANALYST:	JRW - Las Vegas Division
MATRIX:	Solid	EXTRACTED:	8/23/00
DILUTION:	1	ANALYZED:	8/24/00

PARAMETER	Result		Reporting Limit
Gasoline Range (C8-C12)	ND		10. mg/kg
Diesel Range (C12-C22)	ND		10. mg/kg
Oil Range (C22-C34)	80	mg/kg	50. mg/kg
Total	80	mg/kg	10. mg/kg

QUALITY CONTROL DATA:

Surrogate	% Recovery	Acceptable Range
Octacosane	75	54 - 130

ND - Not Detected

CLIENT:	Bechtel Nevada	CLIENT ID:	UC4SV7
PROJECT ID:	V881	DATE SAMPLED:	8/22/00
PROJECT #:	17777	NEL SAMPLE ID:	L0008264-02

TEST: **Total Extractable Petroleum Hydrocarbons Fuel Finger Print by EPA Method 8015M, July 1992**

METHOD:	EPA 8015M	ANALYST:	JRW - Las Vegas Division
MATRIX:	Solid	EXTRACTED:	8/23/00
DILUTION:	1	ANALYZED:	8/25/00

PARAMETER	Result	Reporting Limit
Gasoline Range (C8-C12)	ND	10. mg/kg
Diesel Range (C12-C22)	ND	10. mg/kg
Oil Range (C22-C34)	ND	50. mg/kg
Total	ND	10. mg/kg

QUALITY CONTROL DATA:

Surrogate	% Recovery	Acceptable Range
Octacosane	74	54 - 130

ND - Not Detected

CLIENT:	Bechtel Nevada	CLIENT ID:	**UC4SV8**
PROJECT ID:	V881	DATE SAMPLED:	8/22/00
PROJECT #:	17777	NEL SAMPLE ID:	L0008264-03
TEST:	**Total Extractable Petroleum Hydrocarbons Fuel Finger Print by EPA Method 8015M, July 1992**		
METHOD:	EPA 8015M	ANALYST:	JRW - Las Vegas Division
MATRIX:	Solid	EXTRACTED:	8/25/00
DILUTION:	1	ANALYZED:	8/24/00

PARAMETER	**Result**	**Reporting Limit**
Gasoline Range (C8-C12)	ND	10. mg/kg
Diesel Range (C12-C22)	ND	10. mg/kg
Oil Range (C22-C34)	ND	50. mg/kg
Total	ND	10. mg/kg

QUALITY CONTROL DATA:

Surrogate	**% Recovery**	**Acceptable Range**
Octacosane	89	54 - 130

ND - Not Detected

CLIENT:	Bechtel Nevada	CLIENT ID:	**UC4SV9**
PROJECT ID:	V881	DATE SAMPLED:	8/22/00
PROJECT #:	17777	NEL SAMPLE ID:	L0008264-04

TEST: **Total Extractable Petroleum Hydrocarbons Fuel Finger Print by EPA Method 8015M, July 1992**

METHOD:	EPA 8015M	ANALYST:	JRW - Las Vegas Division
MATRIX:	Solid	EXTRACTED:	8/23/00
DILUTION:	1	ANALYZED:	8/24/00

PARAMETER	Result		Reporting Limit
Gasoline Range (C8-C12)	ND		10. mg/kg
Diesel Range (C12-C22)	40	mg/kg	10. mg/kg
Oil Range (C22-C34)	86	mg/kg	50. mg/kg
Total	126	mg/kg	10. mg/kg

QUALITY CONTROL DATA:

Surrogate	% Recovery	Acceptable Range
Octacosane	103	54 - 130

ND - Not Detected

CLIENT:	Bechtel Nevada	CLIENT ID:	UC4SV10
PROJECT ID:	V881	DATE SAMPLED:	8/22/00
PROJECT #:	17777	NEL SAMPLE ID:	L0008264-05

TEST: **Total Extractable Petroleum Hydrocarbons Fuel Finger Print by EPA Method 8015M, July 1992**

METHOD:	EPA 8015M	ANALYST:	JRW - Las Vegas Division
MATRIX:	Solid	EXTRACTED:	8/23/00
DILUTION:	1	ANALYZED:	8/24/00

PARAMETER	Result	Reporting Limit
Gasoline Range (C8-C12)	ND	10. mg/kg
Diesel Range (C12-C22)	ND	10. mg/kg
Oil Range (C22-C34)	ND	50. mg/kg
Total	ND	10. mg/kg

QUALITY CONTROL DATA:

Surrogate	% Recovery	Acceptable Range
Octacosane	68	54 - 130

ND - Not Detected

CLIENT:	Bechtel Nevada	CLIENT ID:	**UC4SV11**
PROJECT ID:	V881	DATE SAMPLED:	8/22/00
PROJECT #:	17777	NEL SAMPLE ID:	L0008264-06

TEST:	**Total Extractable Petroleum Hydrocarbons Fuel Finger Print by EPA Method 8015M, July 1992**		
METHOD:	EPA 8015M	ANALYST:	JRW - Las Vegas Division
MATRIX:	Solid	EXTRACTED:	8/23/00
DILUTION:	1	ANALYZED:	8/24/00

PARAMETER	**Result**		**Reporting Limit**
Gasoline Range (C8-C12)	ND		10. mg/kg
Diesel Range (C12-C22)	ND		10. mg/kg
Oil Range (C22-C34)	64	mg/kg	50. mg/kg
Total	64	mg/kg	10. mg/kg

QUALITY CONTROL DATA:

Surrogate	**% Recovery**	**Acceptable Range**
Octacosane	77	54 - 130

ND - Not Detected

CLIENT:	Bechtel Nevada	CLIENT ID:	**UC4SV12**
PROJECT ID:	V881	DATE SAMPLED:	8/22/00
PROJECT #:	17777	NEL SAMPLE ID:	L0008264-07

TEST:	**Total Extractable Petroleum Hydrocarbons Fuel Finger Print by EPA Method 8015M, July 1992**		
METHOD:	EPA 8015M	ANALYST:	JRW - Las Vegas Division
MATRIX:	Solid	EXTRACTED:	8/23/00
DILUTION:	1	ANALYZED:	8/24/00

PARAMETER	**Result**		**Reporting Limit**
Gasoline Range (C8-C12)	ND		10. mg/kg
Diesel Range (C12-C22)	22	mg/kg	10. mg/kg
Oil Range (C22-C34)	140	mg/kg	50. mg/kg
Total	162	mg/kg	10. mg/kg

QUALITY CONTROL DATA:

Surrogate	**% Recovery**	**Acceptable Range**
Octacosane	85	54 - 130

ND - Not Detected

CLIENT:	Bechtel Nevada	CLIENT ID:	UC4SV13
PROJECT ID:	V881	DATE SAMPLED:	8/22/00
PROJECT #:	17777	NEL SAMPLE ID:	L0008264-08

TEST: **Total Extractable Petroleum Hydrocarbons Fuel Finger Print by EPA Method 8015M, July 1992**

METHOD:	EPA 8015M	ANALYST:	JRW - Las Vegas Division
MATRIX:	Solid	EXTRACTED:	8/23/00
DILUTION:	1	ANALYZED:	8/25/00

PARAMETER	Result	Reporting Limit
Gasoline Range (C8-C12)	ND	10. mg/kg
Diesel Range (C12-C22)	ND	10. mg/kg
Oil Range (C22-C34)	ND	50. mg/kg
Total	ND	10. mg/kg

QUALITY CONTROL DATA:

Surrogate	% Recovery	Acceptable Range
Octacosane	77	54 - 130

ND - Not Detected

CLIENT:	Bechtel Nevada	CLIENT ID:	UC4SV14
PROJECT ID:	V881	DATE SAMPLED:	8/22/00
PROJECT #:	17777	NEL SAMPLE ID:	L0008264-09

TEST:	**Total Extractable Petroleum Hydrocarbons Fuel Finger Print by EPA Method 8015M, July 1992**		
METHOD:	EPA 8015M	ANALYST:	JRW - Las Vegas Division
MATRIX:	Solid	EXTRACTED:	8/23/00
DILUTION:	1	ANALYZED:	8/25/00

PARAMETER	Result		Reporting Limit
Gasoline Range (C8-C12)	22	mg/kg	10. mg/kg
Diesel Range (C12-C22)	43	mg/kg	10. mg/kg
Oil Range (C22-C34)	140	mg/kg	50. mg/kg
Total	205	mg/kg	10. mg/kg

QUALITY CONTROL DATA:

Surrogate	% Recovery	Acceptable Range
Octacosane	82	54 - 130

ND - Not Detected

CLIENT:	Bechtel Nevada	CLIENT ID:	UC4SV15
PROJECT ID:	V881	DATE SAMPLED:	8/22/00
PROJECT #:	17777	NEL SAMPLE ID:	L0008264-10

TEST: **Total Extractable Petroleum Hydrocarbons Fuel Finger Print by EPA Method 8015M, July 1992**

METHOD:	EPA 8015M	ANALYST:	JRW - Las Vegas Division
MATRIX:	Solid	EXTRACTED:	8/25/00
DILUTION:	1	ANALYZED:	8/25/00

PARAMETER	Result	Reporting Limit
Gasoline Range (C8-C12)	ND	10. mg/kg
Diesel Range (C12-C22)	ND	10. mg/kg
Oil Range (C22-C34)	ND	50. mg/kg
Total	ND	10. mg/kg

QUALITY CONTROL DATA:

Surrogate	% Recovery	Acceptable Range
Octacosane	97	54 - 130

ND - Not Detected

CLIENT:	Bechtel Nevada	CLIENT ID:	**Method Blank**
PROJECT ID:	V881	DATE SAMPLED:	NA
PROJECT #:	17777	NEL SAMPLE ID:	000823TPHS-BLK
TEST:	**Total Extractable Petroleum Hydrocarbons Fuel Finger Print by EPA Method 8015M, July 1992**		
METHOD:	EPA 8015M	ANALYST:	JRW - Las Vegas Division
MATRIX:	Solid	EXTRACTED:	8/23/00
		ANALYZED:	8/24/00

PARAMETER	Result	Reporting Limit
Gasoline Range (C8-C12)	ND	10. mg/kg
Diesel Range (C12-C22)	ND	10. mg/kg
Oil Range (C22-C34)	ND	50. mg/kg
Total	ND	10. mg/kg

QUALITY CONTROL DATA:

Surrogate	% Recovery	Acceptable Range
Octacosane	95	54 - 130

ND - Not Detected

CLIENT:	Bechtel Nevada	CLIENT ID:	**Method Blank**
PROJECT ID:	V881	DATE SAMPLED:	NA
PROJECT #:	17777	NEL SAMPLE ID:	000825TPHS-FP-BLK
TEST:	**Total Extractable Petroleum Hydrocarbons Fuel Finger Print by EPA Method 8015M, July 1992**		
METHOD:	EPA 8015M	ANALYST:	JRW - Las Vegas Division
MATRIX:	Solid	EXTRACTED:	8/25/00
		ANALYZED:	8/28/00

PARAMETER	Result	Reporting Limit
Gasoline Range (C8-C12)	ND	10. mg/kg
Diesel Range (C12-C22)	ND	10. mg/kg
Oil Range (C22-C34)	ND	50. mg/kg
Total	ND	10. mg/kg

QUALITY CONTROL DATA:

Surrogate	% Recovery	Acceptable Range
Octacosane	92	54 - 130

ND - Not Detected

BN 8/25 L00082621

Bechtel Nevada

ANALYTICAL SERVICES LABORATORY
SERVICES REQUEST & CHAIN OF CUSTODY RECORD

Page 1 of 1

PROJECT/ CLIENT INFORMATION

Project: CNTA 2000 | BN Org#: 2152
Charge No.: C8G014AC | ASL Prog.:
Project Manager: Wayne Johnson
Phone: 295-0573 | Fax: 295-7761 | M/S: NTS 306

REPORT INFORMATION

Send Report to: Dave Madson
Phone: 295-7211 | Fax: 295-7761 | M/S: NTS 306
Turnaround: ( ) Standard - 30 days Non-rad, 60 Days Rad, Other: _____
(X) Rush Preliminary by: 48 hours Final by: _____
Final report format: (X) Standard ( ) NTS-WAC ( ) Other: _____

SAMPLE INFORMATION

Sampling Site: UC-4 Area S
The samples submitted contain (check);
( ) Hazardous ( ) Radioactive (X) Unknown contamination. If known, attach a brief narrative summary identifying contaminants. This information will ensure compliance with applicable regulations and allow for the safe handling of the sample materials.

LAB USE ONLY

Rad SGD: | Non-Rad SDG: V881
Rad Packet: | Non-Rad Packet: W1925
Client Services Representative:

Will these analyses be performed under a signed SOW? ( ) YES ( ) NO
If so, do analyses entered here agree with the SOW? ( ) YES ( ) NO ( ) N/A
If not, identify the variation _____
CSR initials indicating review and approval: _____ Date: _____

ANALYSES & METHOD

ITEM	ID / DESCRIPTION	SAMPLING DATE	SAMPLING TIME	MATRIX	TPH (Gas, Diesel, Waste Oil)
01 0	UC4SV6	8/22/00	1448	Soil	✓
02 1	UC4SV7		1456		✓
03 2	UC4SV8		1505		✓
04 3	UC4SV9		1514		✓
05 4	UC4SV10		1517		✓
06 5	UC4SV11		1527		✓
07 6	UC4SV12		1536		✓
08 7	UC4SV13		1539		✓
09 8	UC4SV14		1543		✓
10 9	UC4SV15	↓	1545	↓	✓

SAMPLE RECEIPT INFORMATION

Are all sample containers received intact ( ) Yes ( ) No
Comments: _____

Do the labels agree with this form? ( ) Yes ( ) No
Comments: _____

Was a Material Clearance Tag submitted? ( ) Yes ( ) No
Comments: _____

COMMENTS
(Preservative, size/volume, MS/MSD, special analysis, rad matrix code, count time, etc.)

Custody Seal Intact: Y N None Temp: 4°
Condition when received: Poor Good

Transfer of samples submitted for analyses

Sampled/Relinquished (Signature/Organization)	DATE / TIME	Received by (Signature/Organization)
[illegible] BNER	08/23/00 1637	Paul F Brown
Paul F Brown BNER	8/23/00 [illegible]	[illegible]
[illegible] BN/ER	8/23/00 0845	CA Castaneda

Complete for samples shipped to an OFF-SITE Subcontract Laboratory NEL

Relinquished (BN Representative Signature)	DATE / TIME	Received (Courier & Tracking Info.)
CA Castaneda	8/23/00 1300	BN COURIER
Relinquished (Courier & Tracking Info.)	DATE / TIME	Received (1st tier Subcontractor Rep)
BN COURIER	8/23/00 1500	[illegible]
Relinquished (1st tier Subcontractor Rep)	DATE / TIME	Received (2nd tier Subcontractor Rep)

Distribution: Original - To be retained by laboratory performing final analysis
Copy 1 - To be retained by laboratory performing intermediate analysis

BN 0733 (02/98)

NEL LABORATORIES
Reno • Las Vegas • Boise
Phoenix • Sacramento

Las Vegas Divisio
4208 Arcata Way, Suite A • Las Vegas, NV 8903
(702) 657-1010 • Fax: (702) 657-157
1-888-368-328

CLIENT: Bechtel Nevada
P.O. Box 98521, M/S NTS273
Las Vegas, NV 89193-8521
ATTN: Ted Redding

PROJECT NAME: NA 50G V890
PROJECT NUMBER: 17777

NEL ORDER ID: L0008328

Attached are the analytical results for samples in support of the above referenced project.

Samples submitted for this project were not sampled by NEL Laboratories. Samples were received by NEL in good condition, under chain of custody on 8/29/00.

Should you have any questions or comments, please feel free to contact our Client Services department at (702) 657-1010.

Stan Van Wagenen
Laboratory Manager

8/31/00
Date

CERTIFICATIONS:

	Reno	Las Vegas	S. California
Arizona	AZ0520	AZ0518	AZ0605
California	1707	2002	2264
US Army Corps of Engineers	Certified	Certified	

	Reno	Las Vegas	S. California
Idaho	Certified	Certified	
Montana	Certified	Certified	
Nevada	NV033	NV052	CA084
L.A.C.S.D.			10228

CLIENT: Bechtel Nevada
PROJECT ID: NA
PROJECT #: 17777

TEST: Total Extractable Petroleum Hydrocarbons by EPA Method 8015M, December 1996
METHOD: EPA 8015M
ORDER ID: L0008328
MATRIX: Solid

ANALYST: JRW - Las Vegas Division

CLIENT SAMPLE ID	SAMPLE DATE	NEL SAMPLE ID	RESULT mg/kg	C.R.	Reporting Limit	Surrogate Recovery*	EXTRACTED	ANALYZED
UC4SV16	8/28/00	L0008328-01	ND	ND	20. mg/kg	108 %	8/30/00	8/30/00
UC4SV17	8/28/00	L0008328-02	ND	ND	20. mg/kg	107 %	8/30/00	8/30/00
UC4SV18	8/28/00	L0008328-03	ND	ND	20. mg/kg	109 %	8/30/00	8/30/00

C.R.: Carbon Range

QUALITY CONTROL DATA (Total for Diesel Range):

Sample ID	Result	Acceptable Range	Surrogate Recovery*	Sample Number
Blank, 000830tphs -BLK	ND	< 20 mg/kg	112 %	NA
LCS, 000830tphs1-LCS	75 %	54 - 91 %	107 %	NA
LCSD, 000830tphs1-LCSD	73 %	54 - 91 %	115 %	NA

*** Surrogate used was Octacosane, acceptance limits 55-130%.**

ND - Not Detected

Bechtel Nevada 8/30

ANALYTICAL SERVICES LABORATORY
SERVICES REQUEST & CHAIN OF CUSTODY RECORD

C0008328 Page 1 of 1

PROJECT/CLIENT INFORMATION

Project: CNTA 2000 BN Org#: 2152
Charge No.: C8G014AC ASL Prog.:
Project Manager: Wayne Johnson
Phone: 295-0573 Fax: 295-7761 M/S: NTS 306

REPORT INFORMATION

Send Report to: Dave Madsen
Phone: 295-7211 Fax: 295-7761 M/S: NTS 306
Turnaround: ( ) Standard - 30 days Non-rad, 60 Days Rad, Other: ____
(X) Rush Preliminary by: 24 hour Final by: ____
Final report format: ( ) Standard ( ) NTS-WAC ( ) Other: ____

SAMPLE INFORMATION

Sampling Site: UC4 Area S
The samples submitted contain (check): ( ) Hazardous ( ) Radioactive (X) Unknown contamination. If known, attach a brief narrative summary identifying contaminants. This information will ensure compliance with applicable regulations and allow for the safe handling of the sample materials.

LAB USE ONLY

Rad SGD: Non-Rad SDG:
Rad Packet: Non-Rad Packet:
Client Services Representative:

Will these analyses be performed under a signed SOW? ( ) YES ( ) NO
If so, do analyses entered here agree with the SOW? ( ) YES ( ) NO ( ) N/A
If not, identify the variation ____
CSR Initials indicating review and approval: ____ Date: ____

ANALYSES & METHOD

	ITEM	ID / DESCRIPTION	SAMPLING DATE	SAMPLING TIME	MATRIX	TPH
01	0	UC4SV16	8/28/00	1316	soil	✓
02	1	UC4SV17	8/28/00	1347	↓	✓
03	2	UC4SV18	8/28/00	1408	↓	✓
	3					
	4					
	5					
	6					
	7					
	8					
	9					

LEVEL 4

SAMPLE RECEIPT INFORMATION

Are all sample containers received intact ( ) Yes ( ) No
Comments:

Do the labels agree with this form? ( ) Yes ( ) No
Comments:

Was a Material Clearance Tag submitted? ( ) Yes ( ) No
Comments:

COMMENTS
(Preservative, size/volume, MS/MSD, special analysis, rad matrix code, count time, etc.)

on ice ↓

Custody Seal Intact: (Y) N None Temp: 8°C
Condition when received: Poor (Good)

Transfer of samples submitted for analyses (5°C / [illegible])

Sampled/Relinquished (Signature/Organization)	DATE / TIME	Received by (Signature/Organization)
Ken Campbell BN/ER 8/29/00	0800	[signature] C McFadden 8:01am
Sarah McFadden 8/29/00	8:40am	[signature] 8/29/00

Complete for samples shipped to an OFF-SITE Subcontract Laboratory

Relinquished (BN Representative Signature)	DATE / TIME	Received (Courier & Tracking Info.)
[signature] C McFadden	8/29/00	
Relinquished (Courier & Tracking Info.)	**DATE / TIME**	**Received (1st tier Subcontractor Rep)**
Relinquished (1st tier Subcontractor Rep)	**DATE / TIME**	**Received (2nd tier Subcontractor Rep)**

Distribution: Original - To be retained by laboratory performing final analysis
Copy 1 - To be retained by laboratory performing intermediate analysis
Copy 2 - To be retained by Analytical Services Laboratory
Copy 3 - To be retained by sampler

BN-0732 (02/95)

NEL LABORATORIES
Reno • Las Vegas • Boise
Phoenix • Sacramento

Las Vegas Divisio
4208 Arcata Way, Suite A • Las Vegas, NV 8903
(702) 657-1010 • Fax: (702) 657-157
1-888-368-328

CLIENT: Bechtel Nevada
P.O. Box 98521, M/S NTS273
Las Vegas, NV 89193-8521
ATTN: Dave Madsen

PROJECT NAME: CNTA ~~Closhier~~ Closure SDG V864 NEL ORDER ID: 10008075
PROJECT NUMBER: 2152

Attached are the analytical results for samples in support of the above referenced project.

Samples submitted for this project were not sampled by NEL Laboratories. Samples were received by NEL in good condition, under chain of custody on 8/7/00.

Should you have any questions or comments, please feel free to contact our Client Services department at (702) 657-1010.

Stan Van Wagenen
Laboratory Manager

8/9/00
Date

CERTIFICATIONS:

	Reno	Las Vegas	S. California
Arizona	AZ0520	AZ0518	AZ0605
California	1707	2002	2264
US Army Corps of Engineers	Certified	Certified	

	Reno	Las Vegas	S. California
Idaho	Certified	Certified	
Montana	Certified	Certified	
Nevada	NV033	NV052	CA084
L.A.C.S.D.			10228

CLIENT: Bechtel Nevada
PROJECT ID: CNTA Closhler
PROJECT #: 2152

TEST: Total Extractable Petroleum Hydrocarbons by EPA Method 8015M, December 1996
METHOD: EPA 8015M
ORDER ID: l0008075
MATRIX: Solid

ANALYST: SLB - Las Vegas Division

CLIENT SAMPLE ID	SAMPLE DATE	NEL SAMPLE ID	RESULT mg/kg	C.R.	Reporting Limit	Surrogate Recovery*	EXTRACTED	ANALYZED
UC4WV1	8/4/00	l0008075-01	ND	ND	20. mg/kg	79 %	8/8/00	8/9/00
UC4WV2	8/4/00	l0008075-02	38	D	20. mg/kg	84 %	8/7/00	8/8/00
UC4WV3	8/4/00	l0008075-03	32	D	20. mg/kg	76 %	8/7/00	8/8/00
UC4WV4	8/4/00	l0008075-04	ND	ND	20. mg/kg	78 %	8/8/00	8/9/00
UC4WV5	8/4/00	l0008075-05	20	D	20. mg/kg	89 %	8/7/00	8/8/00
UC4WV6	8/4/00	l0008075-06	ND	ND	20. mg/kg	90 %	8/7/00	8/8/00

C.R.: Carbon Range

D Diesel Range Organics (C10 to C28).

QUALITY CONTROL DATA (Total for Diesel Range):

Sample ID	Result	Acceptable Range	Surrogate Recovery*	Sample Number
Blank, 000807TP -BLK	ND	< 20 mg/kg	83 %	NA
LCS, 000807TPHS-LCS	77 %	54 - 91 %	81 %	NA
LCSD, 000807TPHS-LCSD	73 %	54 - 91 %	93 %	NA
Blank, 000808TP -BLK	ND	< 20 mg/kg	74 %	NA
LCS, 000808TPHS-LCS	55 %	54 - 91 %	68 %	NA
LCSD, 000808TPHS-LCSD	67 %	54 - 91 %	89 %	NA

*** Surrogate used was Octacosane, acceptance limits 55-130%.**

ND - Not Detected

B2 L0008075 8/9 '00 AUG 07 09:01

Bechtel Nevada

ANALYTICAL SERVICES LABORATORY

SERVICES REQUEST & CHAIN OF CUSTODY RECORD

Page 1 of 1

PROJECT/ CLIENT INFORMATION

Project: CNTA Closure | BN Org#: 2152
Charge No.: C8G014AC | ASL Prog.:
Project Manager: Wayne Johnson
Phone: 295-0573 | Fax: 295-7761 | M/S: NTS 306

REPORT INFORMATION

Send Report to: Dave Madsen
Phone: 295-7211 | Fax: 295-7611 | M/S: NTS 306
Turnaround: ( ) Standard - 30 days Non-rad, 60 Days Rad, Other: ____ (X) Rush Preliminary by: 48 hr. Final by: ____
Final report format: (X) Standard ( ) NTS-WAC ( ) Other: ____

SAMPLE INFORMATION

Sampling Site: UC4 Area W
The samples submitted contain (check); ( ) Hazardous ( ) Radioactive (X) Unknown contamination. If known, attach a brief narrative summary identifying contaminants. This information will ensure compliance with applicable regulations and allow for the safe handling of the sample materials.

LAB USE ONLY

Rad SGD: | Non-Rad SDG: V864
Rad Packet: | Non-Rad Packet: W1908
Client Services Representative:

Will these analyses be performed under a signed SOW? ( ) YES ( ) NO
If so, do analyses entered here agree with the SOW? ( ) YES ( ) NO ( ) N/A
If not, identify the variation ____
CSR initials indicating review and approval: ____ Date: ____

ANALYSES & METHOD

ITEM	ID / DESCRIPTION	SAMPLING DATE	SAMPLING TIME	MATRIX	TPH (Diesel/Waste Oil)
01 0	UC4WV1	8/4/00	1547	Soil	✓
02 1	UC4WV2		1540		✓
03 2	UC4WV3		1545		✓
04 3	UC4WV4		1547		✓
05 4	UC4WV5		1550		✓
06 5	UC4WV6	↓	1548	V	✓
6					
7					last line
8					
9					

SAMPLE RECEIPT INFORMATION

Are all sample containers received intact (X) Yes ( ) No
Comments: ____

Do the labels agree with this form? (X) Yes ( ) No
Comments: ____

Was a Material Clearance Tag submitted? (X) Yes ( ) No
Comments: ____

COMMENTS
(Preservative, size/volume, MS/MSD, special analysis, rad matrix code, count time, etc.)

Samples on ice.
SAMPLES FROM CNTA - Non-RAD AREA

Transfer of samples submitted for analyses

Sampled/Relinquished (Signature/Organization)	DATE / TIME	Received by (Signature/Organization)
Kim B. Campbell BNER	8/6/00 1226	Paul F Brown
Paul F Brown BNER	8/7/00 0858	M. S Ford
M S Ford BN/ERA	8/7/00 800	E Bueno

Complete for samples shipped to an OFF-SITE Subcontract Laboratory NEL

Relinquished (BN Representative Signature)	DATE / TIME	Received (Courier & Tracking Info.)
C D Castaneda	8/7/00 1300	BN Courier
Relinquished (Courier & Tracking Info.)	DATE / TIME	Received (1st tier Subcontractor Rep)
Relinquished (1st tier Subcontractor Rep)	DATE / TIME	Received (2nd tier Subcontractor Rep)

Distribution: Original - To be retained by laboratory performing final analysis
Copy 1 - To be retained by laboratory performing intermediate analysis

APPENDIX B

PROJECT PHOTOGRAPHS

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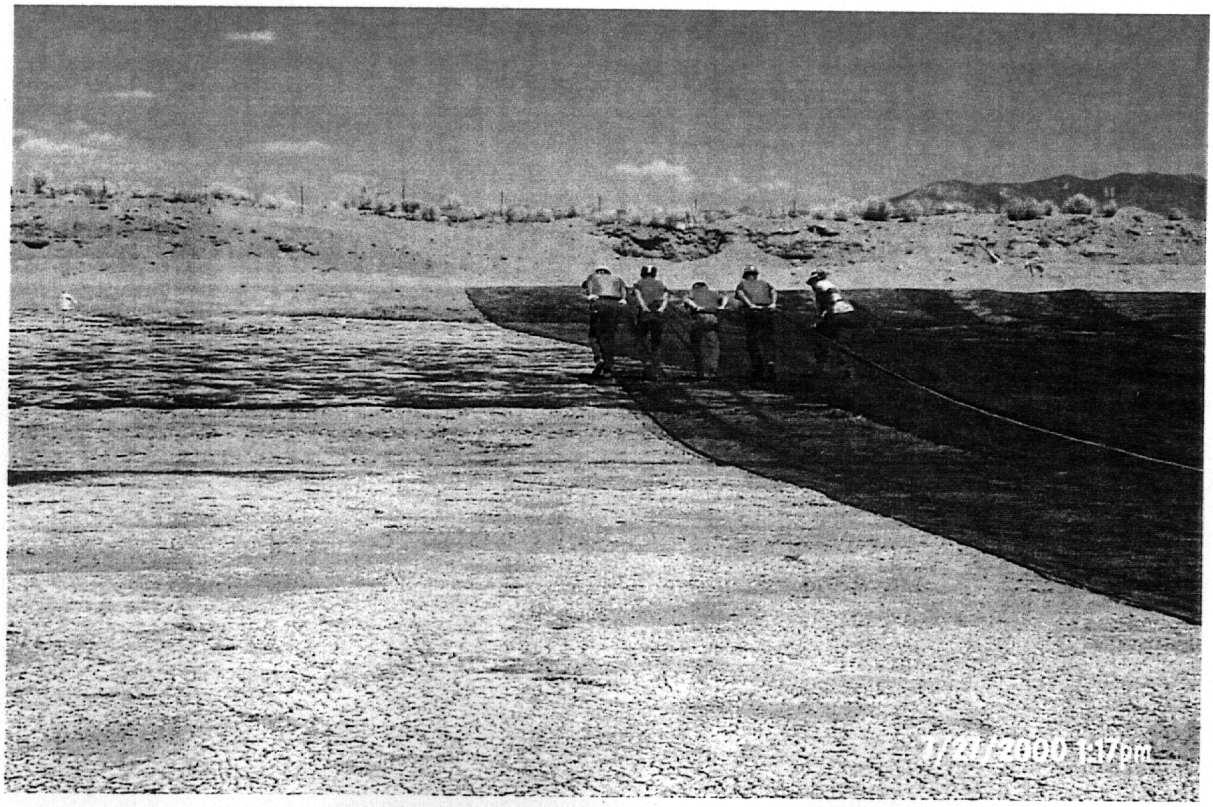
PHOTOGRAPH LOG

PHOTO NUMBER	DATE	DESCRIPTION
1	07/20/2000	Cutting northern side of CMP geogrid anchor bench.
2	07/27/2000	Laying panels of geogrid by hand over the CMP.
3	08/01/2000	Geogrid anchored along northern side of CMP. Geogrid extends completely to the rear (left) edge of bench.
4	08/02/2000	Placing the first 2 foot lift of the CMP cover on the geogrid. Working from the center to the east and west ends of CMP.
5	08/08/2000	Placing the second 2 foot lift of the CMP cover.
6	07/28/2000	Excavating the UC-1 CMP Mud Relocation Trench.
7	08/01/2000	The completed UC-1 CMP Mud Relocation Trench.
8	08/10/2000	Dumping truck loads of drilling material from UC-4 Area S in the UC-1 CMP Mud Relocation Trench.
9	08/11/2000	Stacking drilling material in the Mud Relocation Trench.
10	08/08/2000	Leveling the surface of the stacked drilling mud using a track hoe.
11	08/23/2000	Looking north at the filled Mud Relocation Trench.
12	08/23/2000	West side of geogrid anchor bench in Mud Relocation Trench.
13	08/24/2000	Placing laps of geogrid over the Mud Relocation Trench.
14	09/07/2000	Completed scarified 4 foot mono-layer cover over UC-1 CMP.
15	08/23/2000	South leg of the west flood diversion channel.
16	09/07/2000	Completed east flood diversion channel.
17	09/13/2000	Erecting the UC-1 CMP cover fence.
18	09/14/2000	Using the blade to bury the wire mesh "bunny" fencing.
19	09/13/2000	Scarified UC-1 CMP cover.
20	09/20/2000	Placing subsidence monuments on the UC-1 CMP cover.
21	10/17/2000	Installing the TDR sensors in the UC-1 CMP cover.
22	10/17/2000	Positioning and burying the TDR sensors in the UC-1 CMP cover.

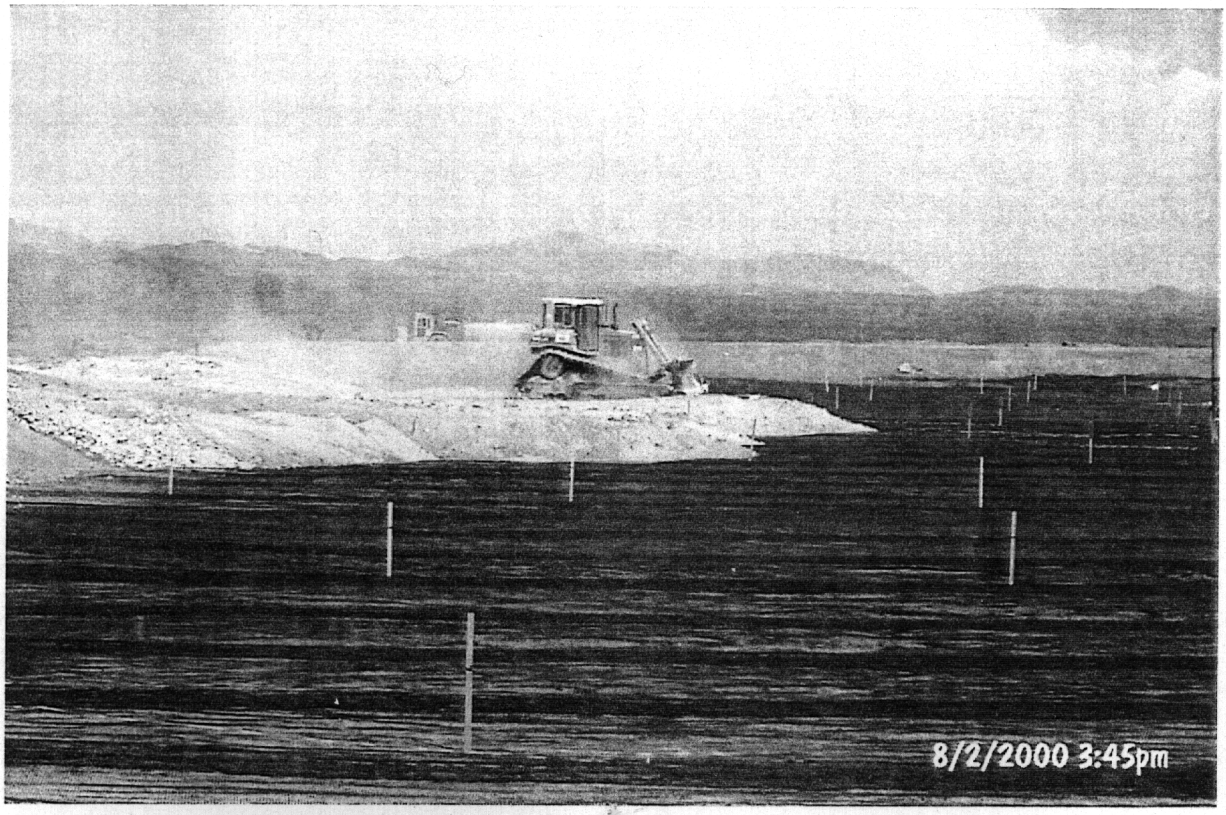
PHOTO NUMBER	DATE	DESCRIPTION
23	12/18/2000	Seeded and mulched UC-1 CMP cover.
24	04/05/2001	Transplanting seedlings on to the UC-1 CMP cover.
25	08/01/2000	Clean closure by excavation of UC-1 Area S, CAS 58-10-03.
26	08/25/2000	Clean closure by excavation of UC-1 Area Y, CAS 58-44-06.
27	08/18//2000	Completed clean closure of UC-3 Area Z, CAS 58-44-03.
28	08/11/2000	Drilling mud in the south bank of the upper area of UC-4 Area S, CAS 58-10-02. Material was removed and placed in the UC-1 Mud Relocation Trench.
29	08/11/2000	Drilling material in the upper section of UC-4 Area S. Material was removed and placed in the UC-1 Mud Relocation Trench.
30	08/15/2000	Drilling mud in the south bank of the upper area of UC-4 Area S, CAS 58-10-02. Material was removed and placed in the UC-1 Mud Relocation Trench.
31	09/14/2000	View looking east down the regraded and scarified drainage of UC-4 Area S. Clean closure of UC-4 Area S, CAS 58-10-02.
32	09/14/2000	Completed clean closure of UC-4 Area W, CAS 58-10-04.

PHOTOGRAPH 1 - Cutting geogrid anchor bench for Central Mud Pit

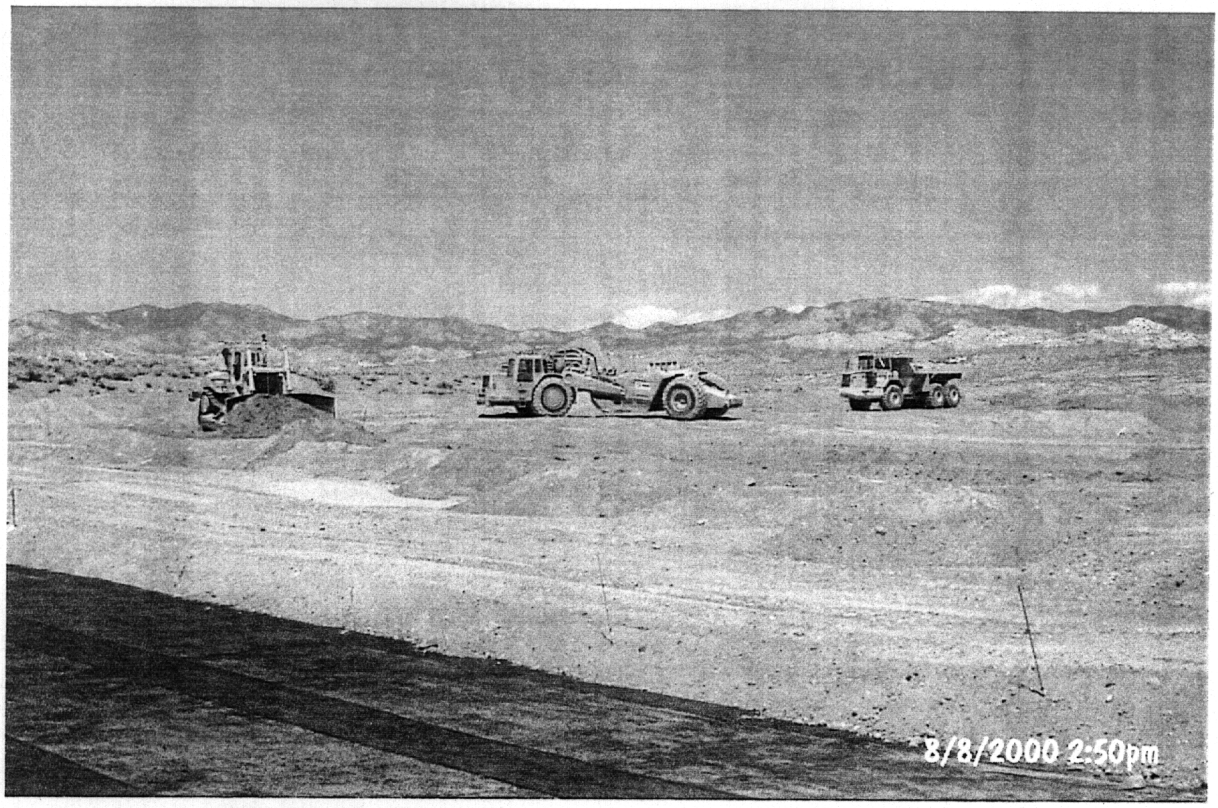


PHOTOGRAPH 2 - Laying panels of geogrid on Central Mud Pit

PHOTOGRAPH 3 - Geogrid anchored in place on CMP

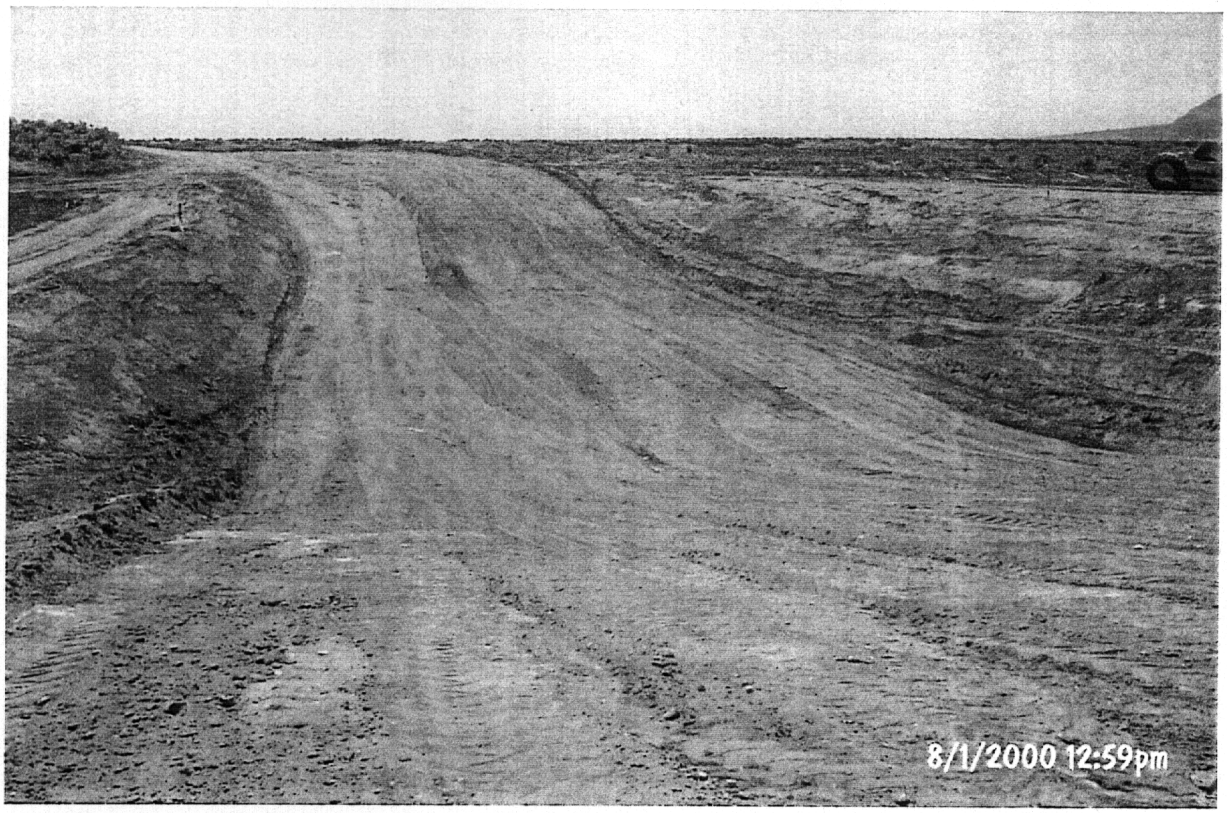


PHOTOGRAPH 4 - First 2 foot lift being place on CMP geogrid



PHOTOGRAPH 5 -Placing the second 2 foot lift on the CMP

PHOTOGRAPH 6 - Excavation of the CMP Mud Relocation Trench

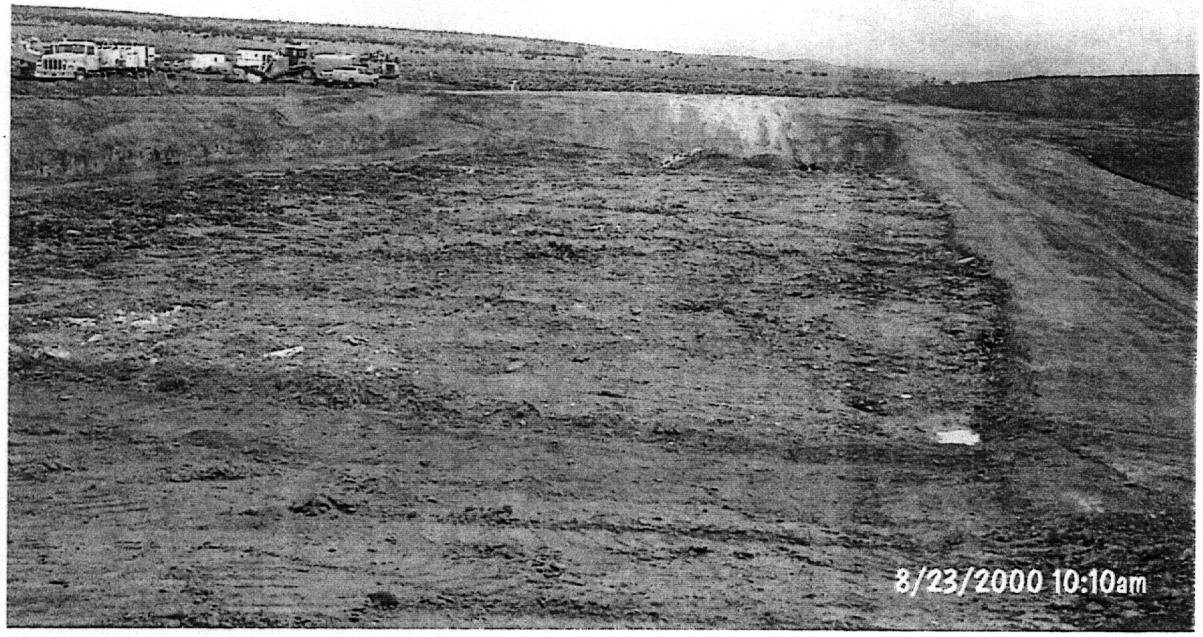


PHOTOGRAPH 7 - Completed CMP Mud Relocation Trench

PHOTOGRAPH 8 - Drilling material from UC-4 Area S being placed in Relocation Trench

PHOTOGRAPH 9 - Stacking drilling material in the Mud Relocation Trench

PHOTOGRAPH 10 - Leveling drilling material surface with Track Hoe

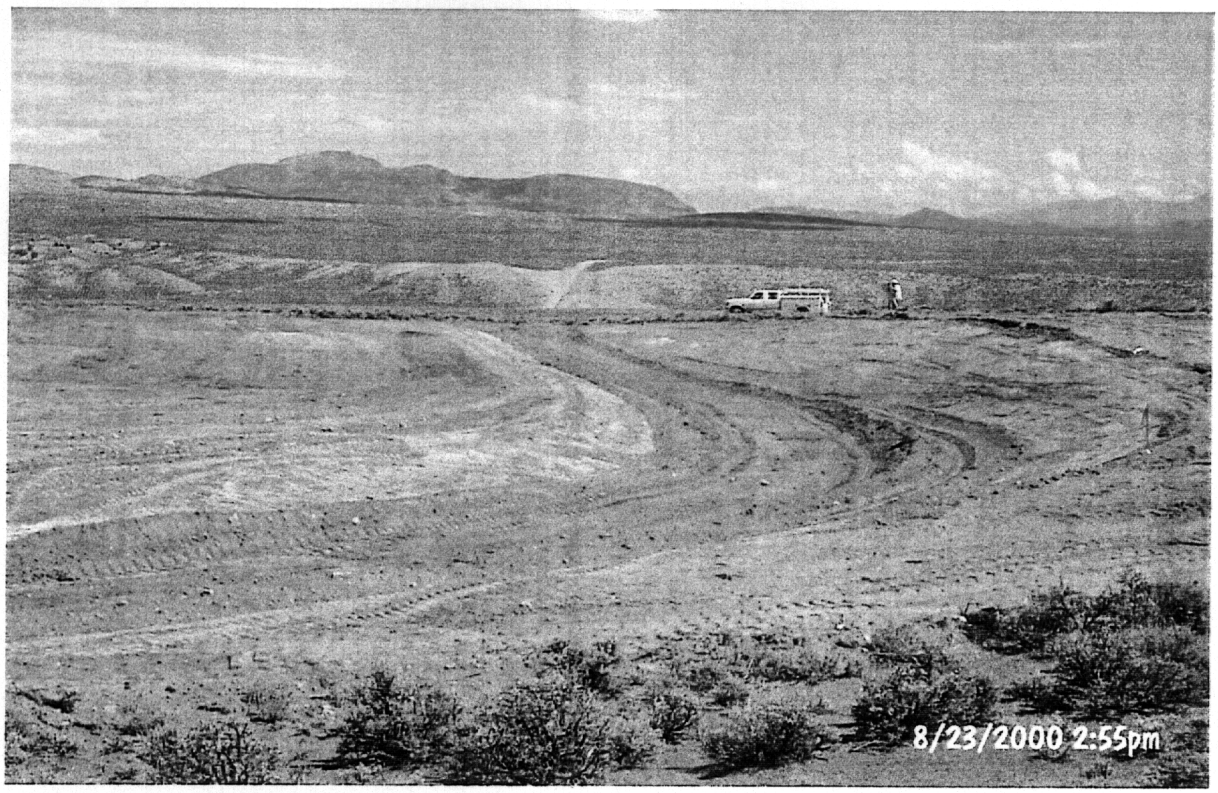


PHOTOGRAPH 11 - Filled CMP Mud Relocation Trench

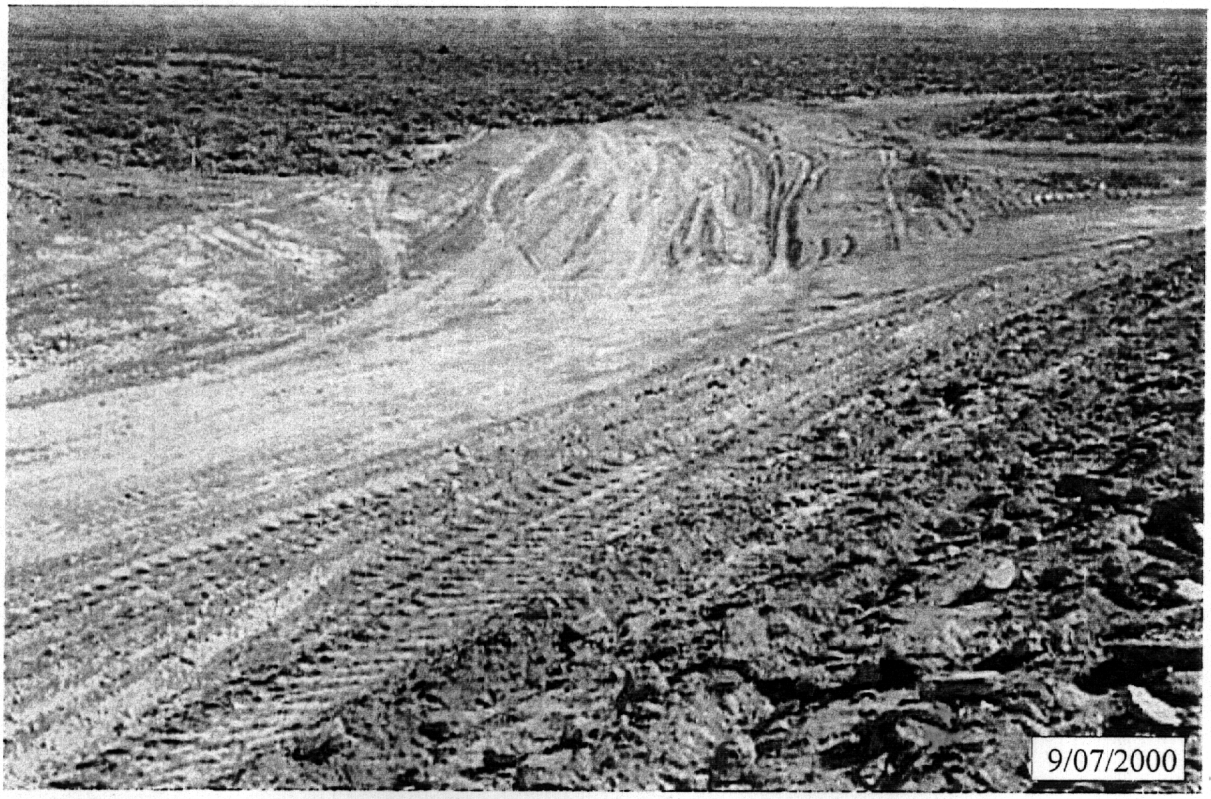
PHOTOGRAPH 12 - Geogrid anchor bench, west side of Mud Relocation Trench

PHOTOGRAPH 13 - Placing geogrid over CMP Mud Relocation Trench

PHOTOGRAPH 14 - Completed 4 foot earthen mono-layer CMP cover



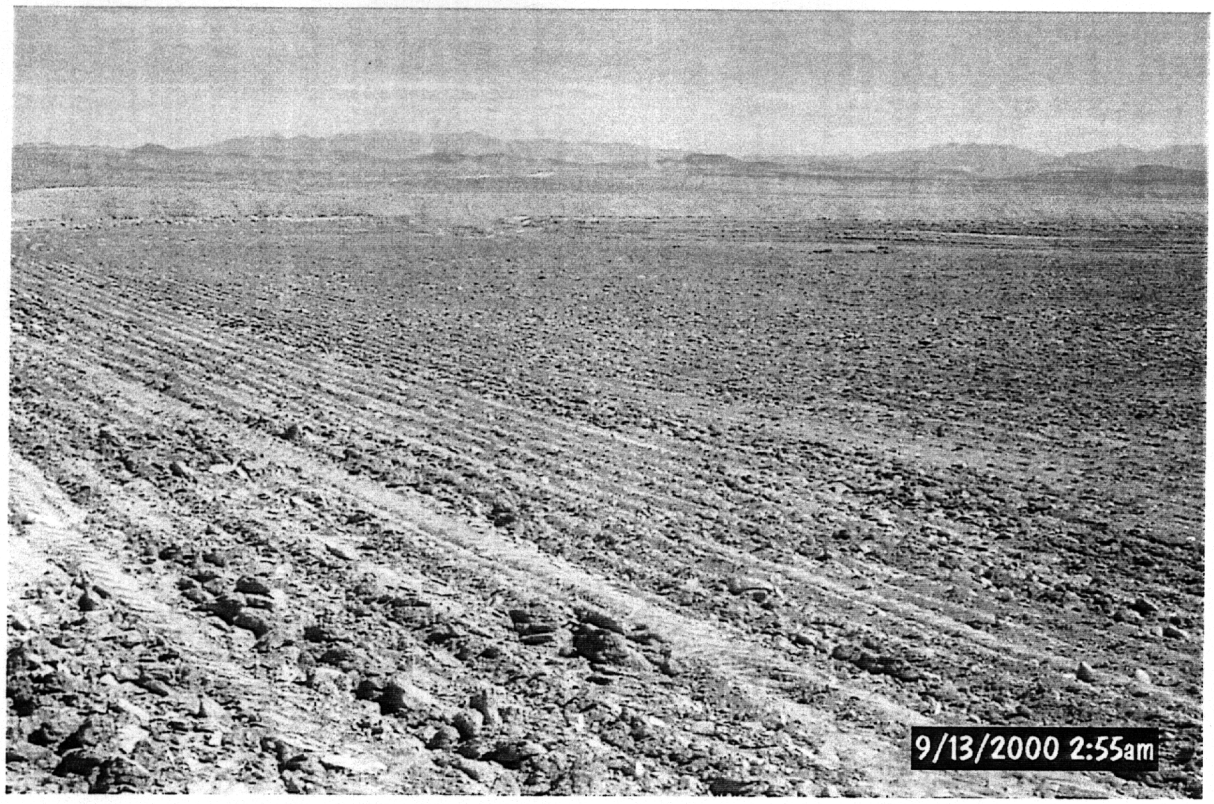
PHOTGRAPH 15 - South portion of the West Diversion Channel



PHOTOGRAPH 16 - Completed East Diversion Channel

PHOTOGRAPH 17 - Erecting the CMP cover fence

PHOTOGRAPH 18 - Burring the wire mesh "bunny" fencing

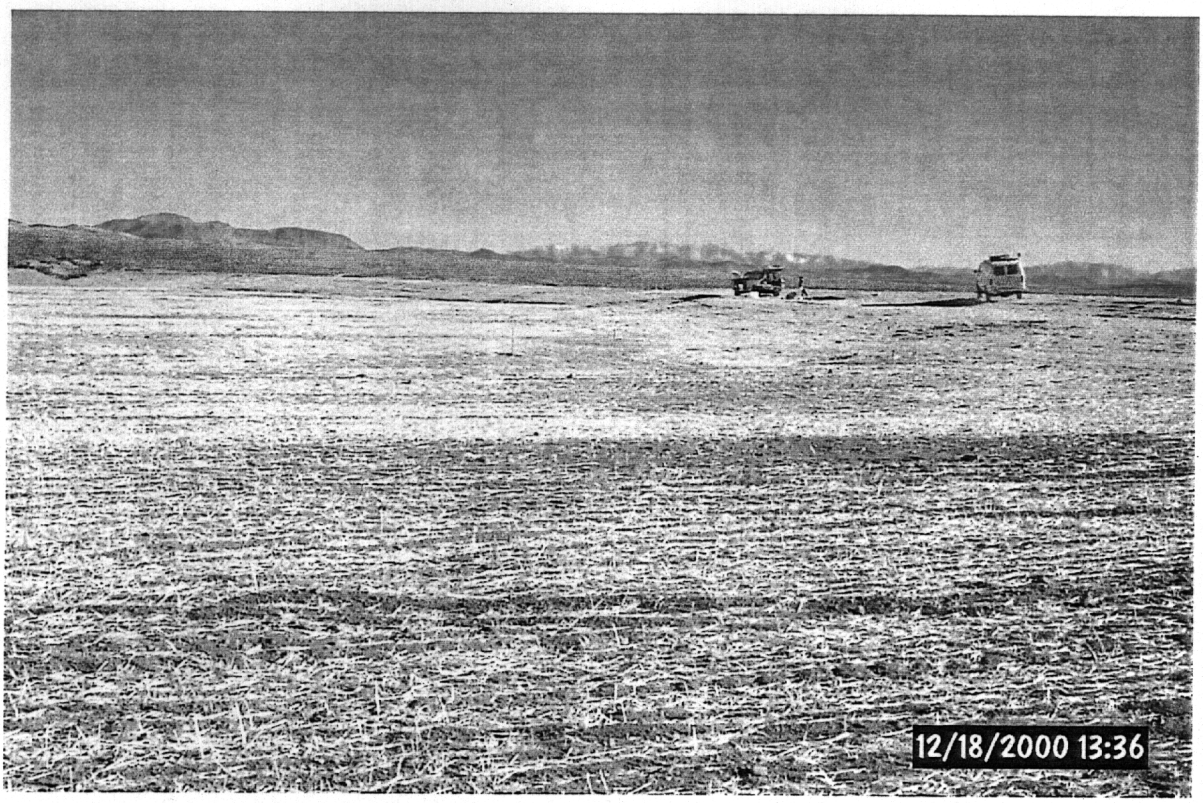


PHOTOGRAPH 19 - Scarified Central Mud Pit cover

PHOTOGRAPH 20 - Placing subsidence monuments on the CMP cover

PHOTOGRAPH 21 - Installing TDR sensors in CMP cover

PHOTOGRAPH 22 - Placing and burying TDR sensors in CMP cover

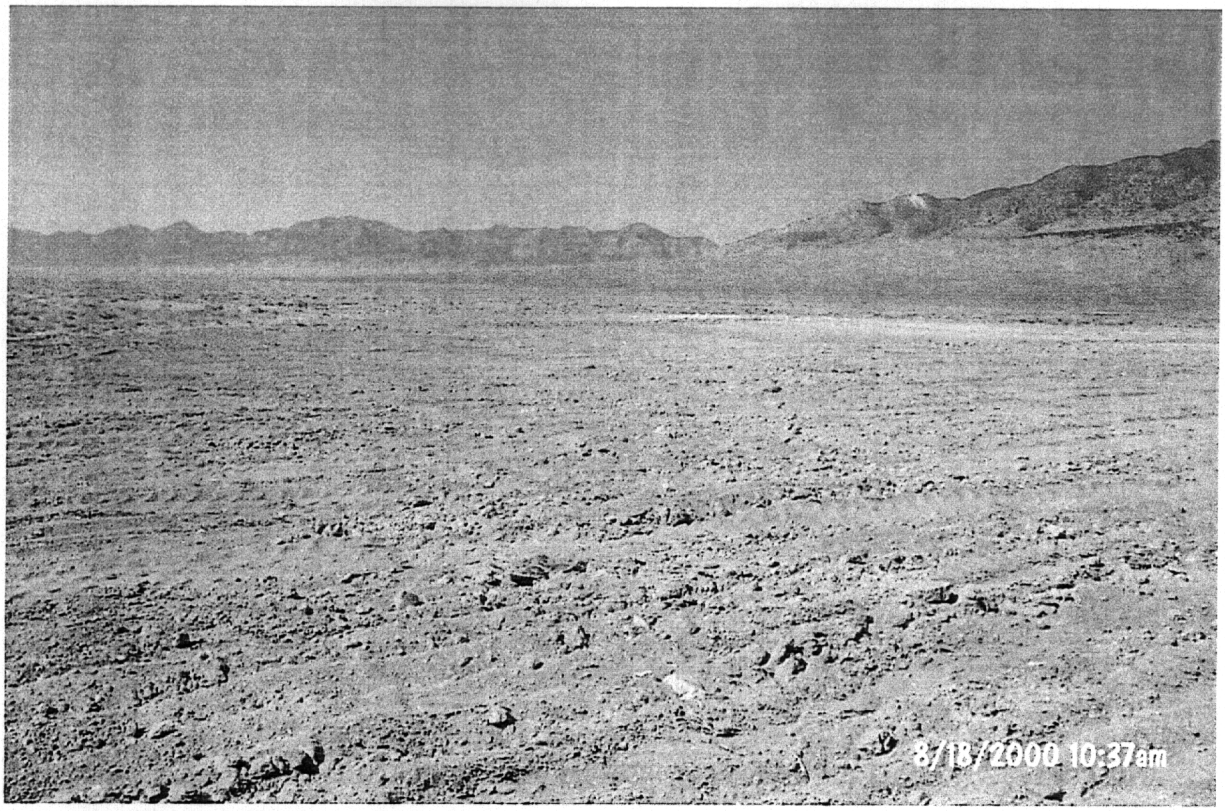


PHOTOGRAPH 23 - Seeded CMP cover

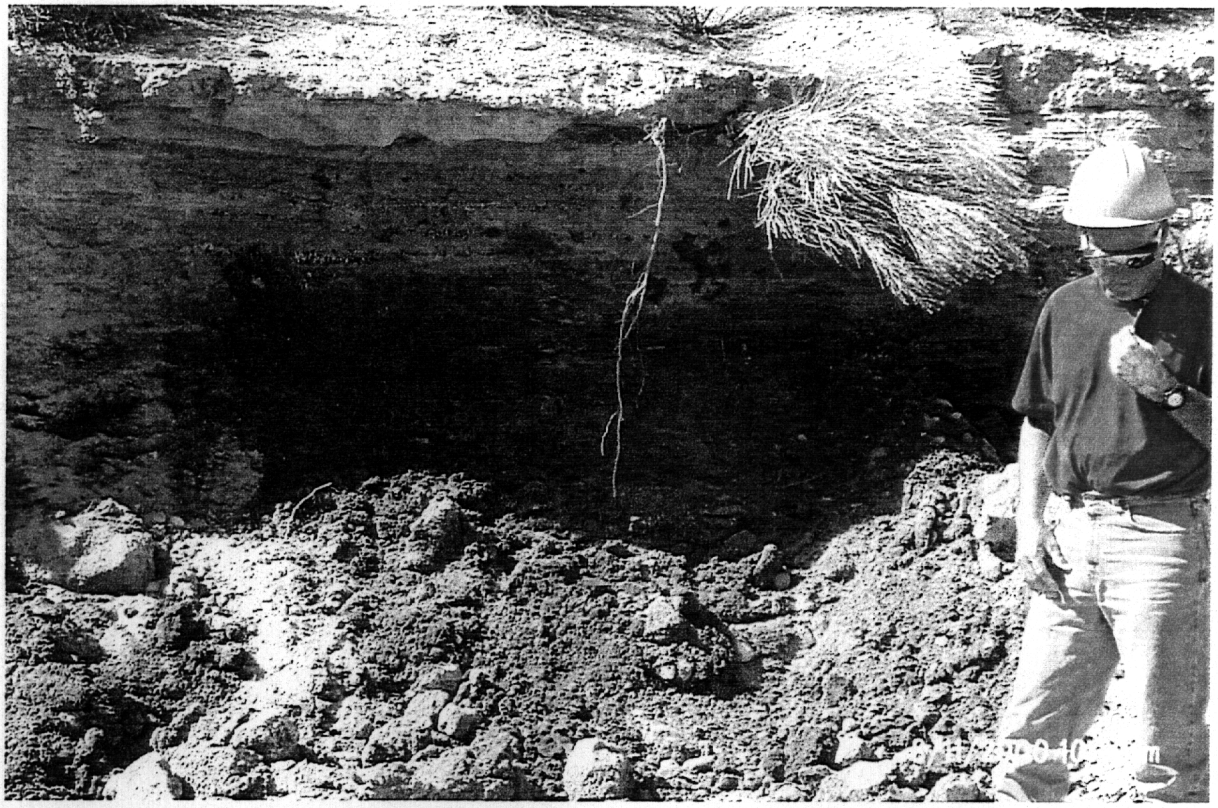
PHOTOGRAPH 24 - Transplanting seedlings to the CMP cover

PHOTOGRAPH 25 - Clean closure by excavation of UC-1 Area S, CAS 58-10-03

PHOTOGRAPH 26 - Clean closure by excavation of UC-1 Area Y, CAS 58-44-06



PHOTOGRAPH 27 - Clean closure by excavation of UC-3 Area Z, CAS 58-44-03

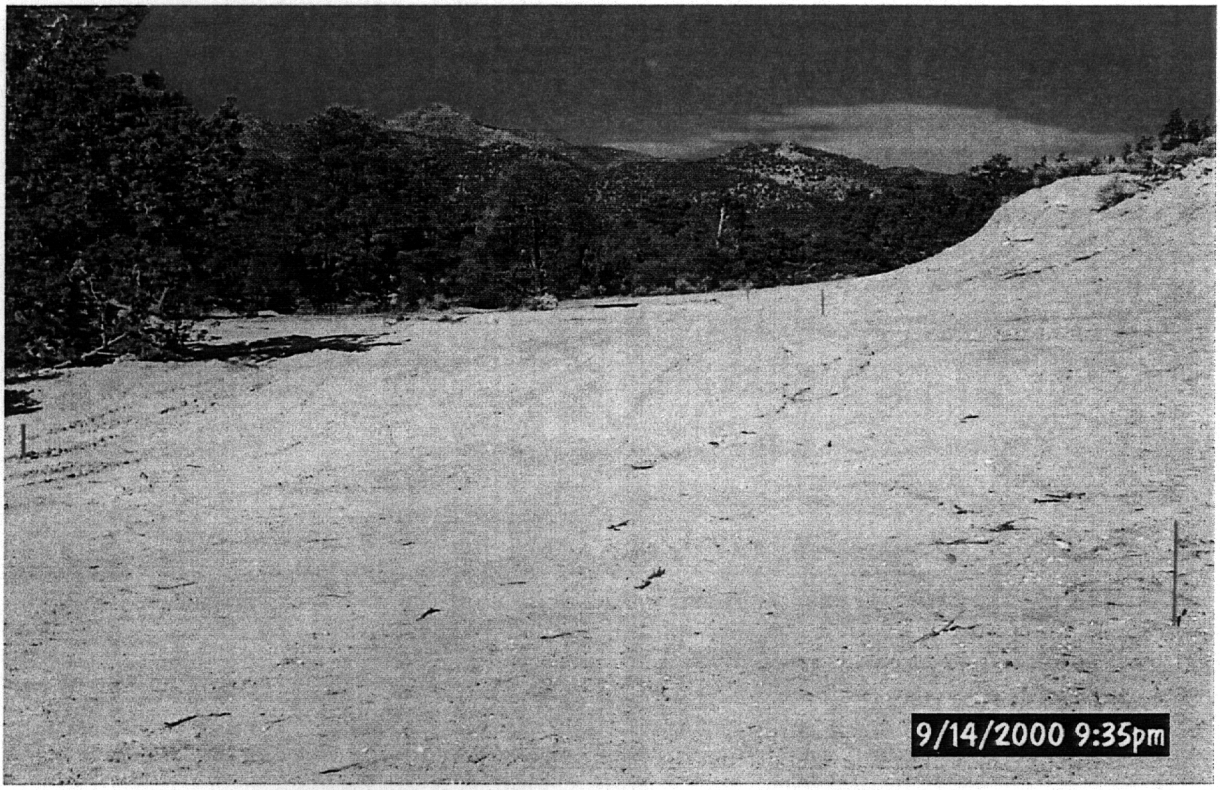


PHOTOGRAPH 28 - Drilling mud/material at UC-4 Area S, CAS 58-10-02

PHOTOGRAPH 29 - Drilling mud/material at UC-4 Area S, CAS 58-10-02

PHOTOGRAPH 30 - Drilling mud/material at UC-4 Area S, CAS 58-10-02

PHOTOGRAPH 31 - Final regraded closed UC-4 Area S, CAS 58-10-02



PHOTOGRAPH 32 - Clean closure of UC-4 Area W, CAS 58-10-04

APPENDIX C

AS-BUILT ENGINEERING DRAWINGS AND DESIGN CHANGE NOTICES

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Bechtel Nevada

Engineering Department
DESIGN CHANGE NOTICE

Sheet 1 of 2

DCN No.: 00/08-419

[X] Design Drawing   [ ] Design Specification   Date Initiated: 8/14/2000

Document No.: JS-058-98228-C34   **Revision No.:** 0

Title: West Diversion Channel Plan & Profile

Description of Change:

Reroute the southern portion of the channel to minimize the area that requires disturbance, and reduce the quantity of required excavation. See page 2 for new horizontal and vertical alignment information.

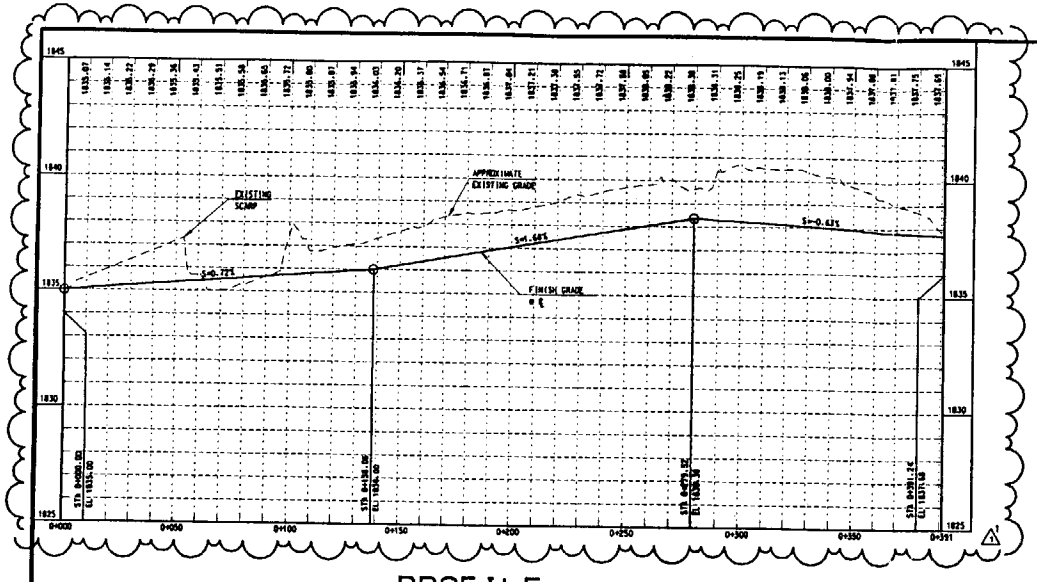
Field placement of excavated soils in a stockpile filling the area between the existing scarp face and the existing berm along the south side of the mud pit, has made it possible to reroute the channel. The new route will pass through this stockpile, and will require grading from both directions into the bottom of the channel (in this area only) to maintain the design drainage scheme (See page 2). Finish grading in this area should be completed after the cap as the finish slope should be away from the intersection line of the cap with the existing berm (similar to Section C, on drawing C33).

Information contained in this DCN was personally conveyed (at the site) to field personnel on 8/2/2000.

Prepared by:	Date:	Checked by:	Date:
[signature]	8/14/00	[signature]	8/14/00

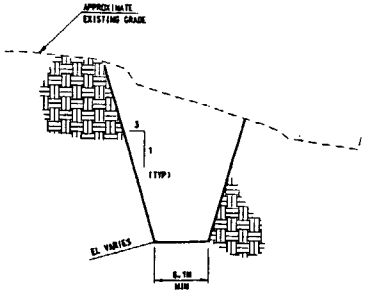
APPROVALS

Project Engineer:	Date:	Other BN Organizations: (PA, ESS&H, etc.)	
[signature]	8/14/00		
	Date:		Date:
	Date:		Date:
	Date:		Date:



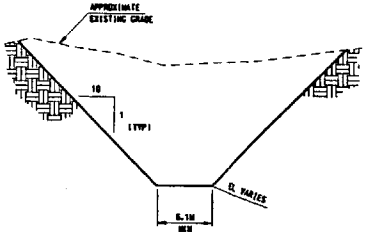
PROFILE

SCALE : HORIZONTAL : 1:1000 VERTICAL : 1:100



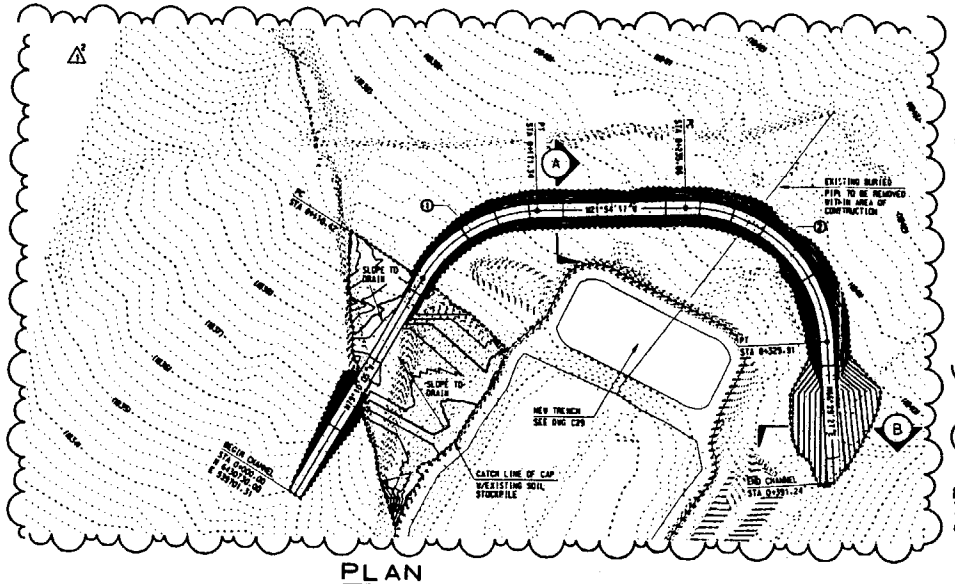
SECTION A

SCALE : HORIZ 1:250
VERT 1:25



SECTION B

SCALE : HORIZ 1:250
VERT 1:25



PLAN

SCALE : HORIZONTAL : 1:1000 CONTOUR INTERVAL = 0.25M

CURVE DATA				
NO	Δ	R	T	L
①	57°15'47"	60.96M	33.28M	60.93M
②	88°23'44"	60.96M	59.28M	94.05M

REFERENCES

TITLE SHEET	JS-056-98228-13
MUD PIT EXTENSION SITE & GRADING PLAN	JS-056-98228-C29

GRAPHIC SCALES

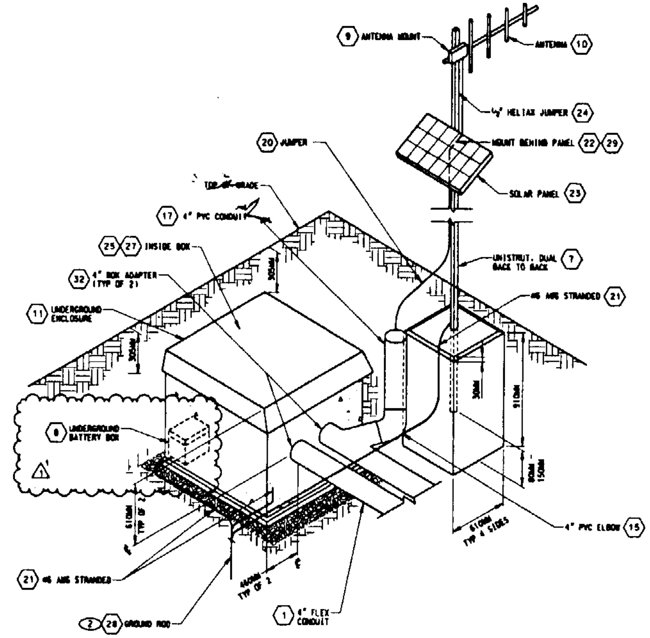
SCALE 1:25 METERS

SCALE 1:100 METERS

SCALE 1:250 METERS

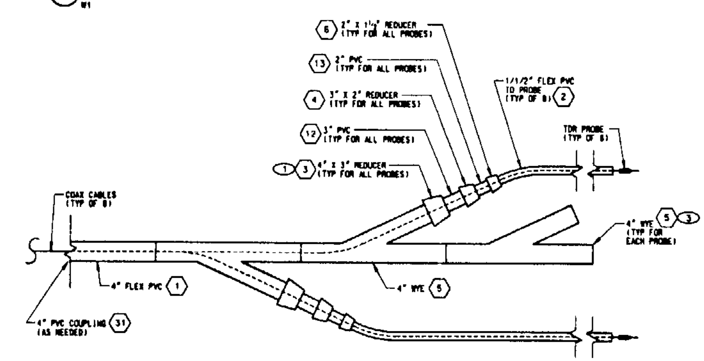
SCALE 1:1000 METERS

SHEET 2 OF 2
DCN 00/08-419



DETAIL 2 W1

SCALE : NOT TO SCALE



DETAIL 3 W1

SCALE : NOT TO SCALE

ORIGINAL AS-BUILT SIGNED BY			
AS-BUILT			
Bechtel Nevada	[signature]	7-10-01	N/A
N/A	N/A	N/A	[signature] 7/10/01
N/A		N/A	[signature] 7/11/01

UNLESS NOTED BY MARKED CHANGES, ALL DIMENSIONS, NOTES, REFERENCES AND CONSTRUCTION FEATURES ARE CORRECTED, AND WERE CONSTRUCTED AS SHOWN ON THIS DRAWING.

TDR PROBE EXCAVATION NOTES

1. STOCK PILE EXCAVATED SOILS TO A HEIGHT NOT EXCEEDING 15 FEET (4.57M).
2. VERIFY THAT EXCAVATIONS MEET OSHA 1926 REQUIREMENTS. THE MAXIMUM SIDE SLOPE SHALL BE 1.5:1 UNLESS SHORING IS UTILIZED TO PREVENT SIDE SLOPE FAILURE FOR BOTH TDR PROBE TRENCH AND MONITORING STATION EXCAVATIONS.
3. EXCAVATION FOR TDR ARRAY SHALL NOT EXCEED A DEPTH OF 4 FEET (1.22M) BELOW THE EXISTING GROUND SURFACE. EXTREME CAUTION SHALL BE EXERCISED DURING EXCAVATION OF THE LAST 1 FOOT (305MM) OF SOILS TO PREVENT DAMAGING THE UNDERLYING GEOGRID.
4. A DITCH WITCH OR OTHER SUITABLE EQUIPMENT SHALL BE USED TO EXCAVATE TRENCHES FOR WIRING RUNS. TRENCHES SHALL BE A MINIMUM DEPTH OF 1 FOOT (305MM) BELOW THE EXISTING GROUND SURFACE.

TDR PROBE BACKFILL NOTES

1. BACKFILL MATERIAL SHALL BE NATIVE SOILS EXCAVATED FROM THE TIME DOMAIN REFLECTOMETRY SENSOR (TDR) PROBE AND MONITORING STATION LOCATIONS SHOWN ON DRAWING #1.
2. VERIFY THAT AREAS TO BE BACKFILLED ARE FREE OF DEBRIS, WATER, AND ROCKS LARGER THAN 6 INCHES.
3. BACKFILL EXCAVATIONS IN 1 FOOT (305MM) MAXIMUM COMPACTED LIFTS.
4. INSTALLATION, BACKFILL, AND COMPACTION OF TDR PROBE AND MONITORING STATION EXCAVATIONS WILL BE DONE BY FIELD TECHNICIANS TO MATCH NATIVE CONDITIONS.
5. COMPACTION TESTING FOR ACCEPTANCE IS NOT REQUIRED.

GENERAL NOTES

FOR EQUIPMENT LIST, REFERENCE DRAWING JS-050-90220-W1.

KEY NOTES

(1) USE 45° ELBOWS AS NEEDED TO REDUCE WIDTH OF TRENCH.
(2) CONNECTION TO GROUND ROD SHALL BE MADE USING AN EXOTHERMIC WELD.
(3) ADD 4" WYE'S (ITEM 5) AS NEEDED TO ACCOMMODATE 8 PROBES.

AS BUILT INFORMATION

1. SUBMIT SURVEY INFORMATION SHOWING COORDINATE LOCATIONS FOR THE TDR PROBES, WIRING RUNS, AND THE MONITORING STATION AS SHOWN ON THE ENGINEERING DRAWINGS.

REFERENCES

COMMUNICATION SITE PLAN JS-050-90220-W1

NO	DATE	REVISION DESCRIPTION
1		AS-BUILT, DATED 04/23/01
0		ISSUED FOR CONSTRUCTION 10/11/00

ORIGINAL MYLAR SIGNED BY:

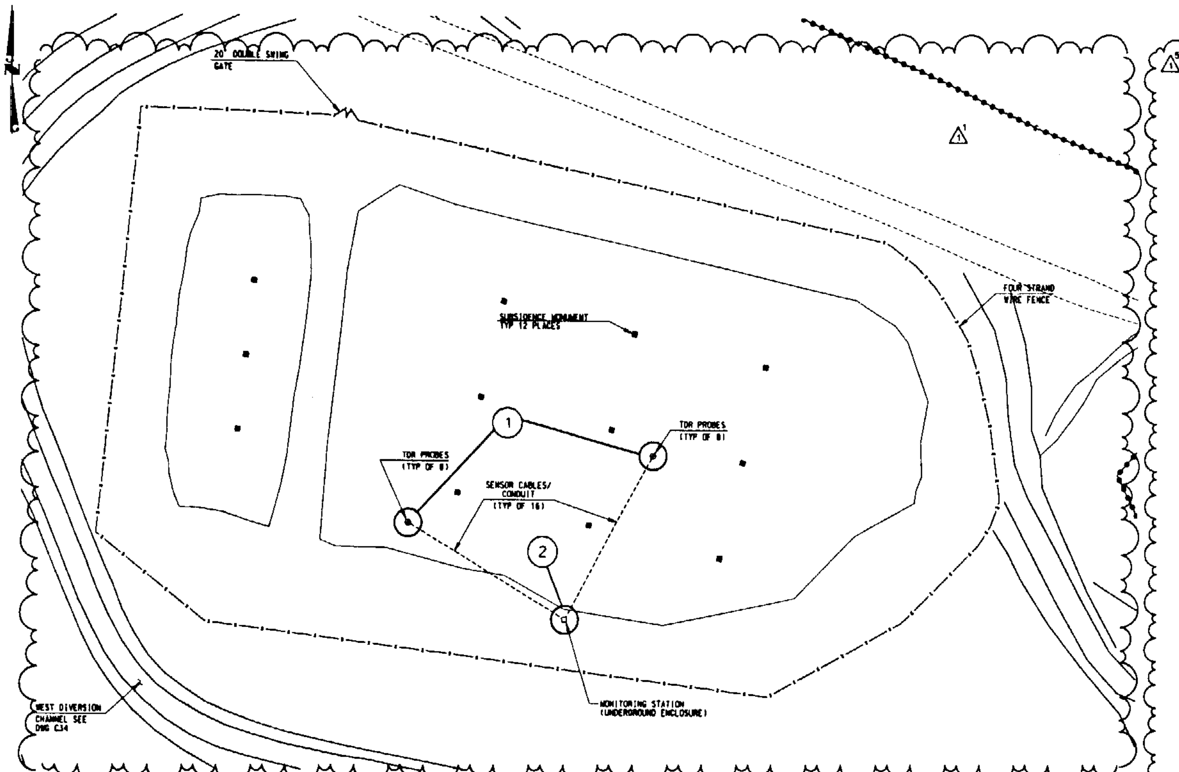
DESIGNED DFE	SUBMITTED BECHTEL NEVADA: EDWARD C LANER	10/11/00
CHECKED DET	DEPT OF ENERGY PROJECT ENGINEER: STEVE NACHT	10/12/00
N/A	PETER A. SANDERS — PROJECT NUMBER 98220A58 — PROJECT AUTH NO N/A — ACTIVITY CODE C8G01021	10/13/00

U.S. DEPARTMENT OF ENERGY
NEVADA OPERATIONS OFFICE, LAS VEGAS, NEVADA
Bechtel Nevada

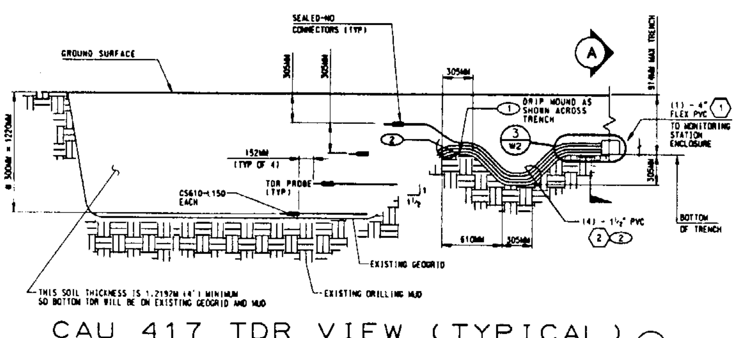
CENTRAL NEVADA TEST AREA — AREA 58
CAU 417 CLOSURE
DETAILS/SECTION

DRAWING NUMBER JS-050-90220-W2 REV 1

07/06/2001 10:46:12 AM g:\Dgn\98220a58\cad_data\uc1\Option B\TDRPROBE\As-Built\w2.dgn



COMMUNICATION SITE PLAN
SCALE : HORIZONTAL : 1:600

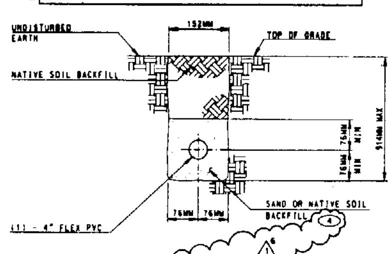


CAU 417 TDR VIEW (TYPICAL) (1)
SCALE : NOT TO SCALE

AS-BUILT			
Bechtel Nevada	[signature]	1-10-01	N/A
N/A	N/A	[signature]	7/10/01
N/A		[signature]	7/17/01

UNLESS NOTED BY MARKED CHANGES, ALL DIMENSIONS, NOTES, REFERENCES AND CONSTRUCTION FEATURES ARE CORRECTED, AND WERE CONSTRUCTED AS SHOWN ON THIS DRAWING.

ORIGINAL AS-BUILT SIGNED BY



SECTION (3) (A)
SCALE : NOT TO SCALE

EQUIPMENT LIST

ITEM NO	NO REQD	DESCRIPTION	VENDORS CAT NO OR APPROVED EQUAL
1	3 SPOOLS	4" FLEXIBLE CONDUIT, DIRECT BURIED, 250' (76.20M) SPOOL	CARLON 11815
2	1 SPOOL	1½" FLEXIBLE CONDUIT, DIRECT BURIED, 250' (76.20M) SPOOL W/PULL STRING	CARLON 11810T
3	16	4" X 3" MALE TO MALE REDUCER	CARLON E952NL
4	16	3" X 2" MALE TO MALE REDUCER	CARLON E952LJ
5	16	4" WYE BRANCH COUPLING	CARLON E916N
6	16	2" X 1½" MALE TO FEMALE REDUCER	CARLON E950JH
7	1	UNISTRUT, 1⅝" SQ. DUAL BACK TO BACK	STOCK
8	1	BATTERY BOX	CAMBELL SCIENTIFIC
9	2	ANTENNA MOUNT	CAMBELL SCIENTIFIC
10	2	ANTENNA	CAMBELL SCIENTIFIC
11	1	UNDERGROUND ENCLOSURE	JENSEN PRECAST
12	3.048M (10')	CONDUIT, 3" PVC, SCH 40	CARLON 49013
13	3.048M (10')	CONDUIT, 2" PVC, SCH 40	CARLON 49011
14	1	GROUNDING KIT, ⅞" HELIAX	ANDREW 204989-2
15	1	4" ELBOW	CARLON UB9AN
16	2	CONNECTORS, ⅞" HELIAX, FEMALE	ANDREW L45N
17	3.048M (10')	CONDUIT, 4" PVC, SCH 40	STOCK
18	-	UNASSIGNED	-
19	1	GOES SATELLITE RADIO	CAMPBELL SCIENTIFIC SAT HDR GOES
20	1	½" SUPERFLEX JUMPER, 15' MALE TO MALE	ANDREW FSJ4X-15
21	1.524M (5')	#6 AWG STRANDED	STOCK
22	1	BONDING CLAMP KIT, ½" HELIAX	ANDREW 204989-1
23	1	MODEM, STANDALONE, 19.2 KBps, V.34, DIAL-UP	ALM 3239
24	3	½" SUPERFLEX JUMPER, 3' MALE TO MALE	ANDREW 20112
25	3.048M (10')	#12 AWG STRANDED, RED & BLACK	STOCK
26	15.240M (50')	CAT 3 6PR-24GA IN PLENUM RATED	GRAYBAR 3P6P24BLRA77PC
27	3.048M (10')	RS-232 CABLE	BN/CED STOCK
28	1	GROUND ROD, 5' X⅝"	A.B. CHANCE C203-0227
29	2	SURGE PROTECTOR	POLYPHASER IS-SONX-C2
30	1	SOLAR PANEL	STOCK
31	8	COUPLING, 4" PVC	CARLON E940N
32	3	BOX ADAPTER, 4" PVC	CARLON E996N
33	30.480M (100')	HELIAX, ⅞" DIELECTRIC	ANDREW LDF5-50A

NOTES

1. COORDINATE/SPOT ELEVATIONS ARE APPROXIMATE - FINAL ELEVATIONS ARE DEPENDENT ON FINAL CONFIGURATION OF GEOGRID BENCH AND MUD LEVEL IN TRENCH.

KEY NOTES

(1) AT ALL LOCATIONS WHERE CONDUITS TRANSITION INTO PIT, INSTALL A DRIP MOUND TO PREVENT WATER FROM ENTERING TRENCH AND FOLLOWING CONDUIT TO PROBES.

(2) FAN CONDUITS IN THE HORIZONTAL PLANE OF TRENCH AS CONDITIONS REQUIRE.

(3) USE THIS DETAIL ON ALL ROAD CROSSINGS AND HIGH TRAFFIC AREAS.

(4) REMOVE ROCKS AND OBJECTS LARGER THAN 3" IN DIAMETER FROM BACKFILL.

REFERENCES

DETAILS/SECTION JS-058-98228-W2

GRAPHIC SCALE
0 15 30 45 60 75
SCALE: 1:600 METERS

ORIGINAL MYLAR SIGNED BY:

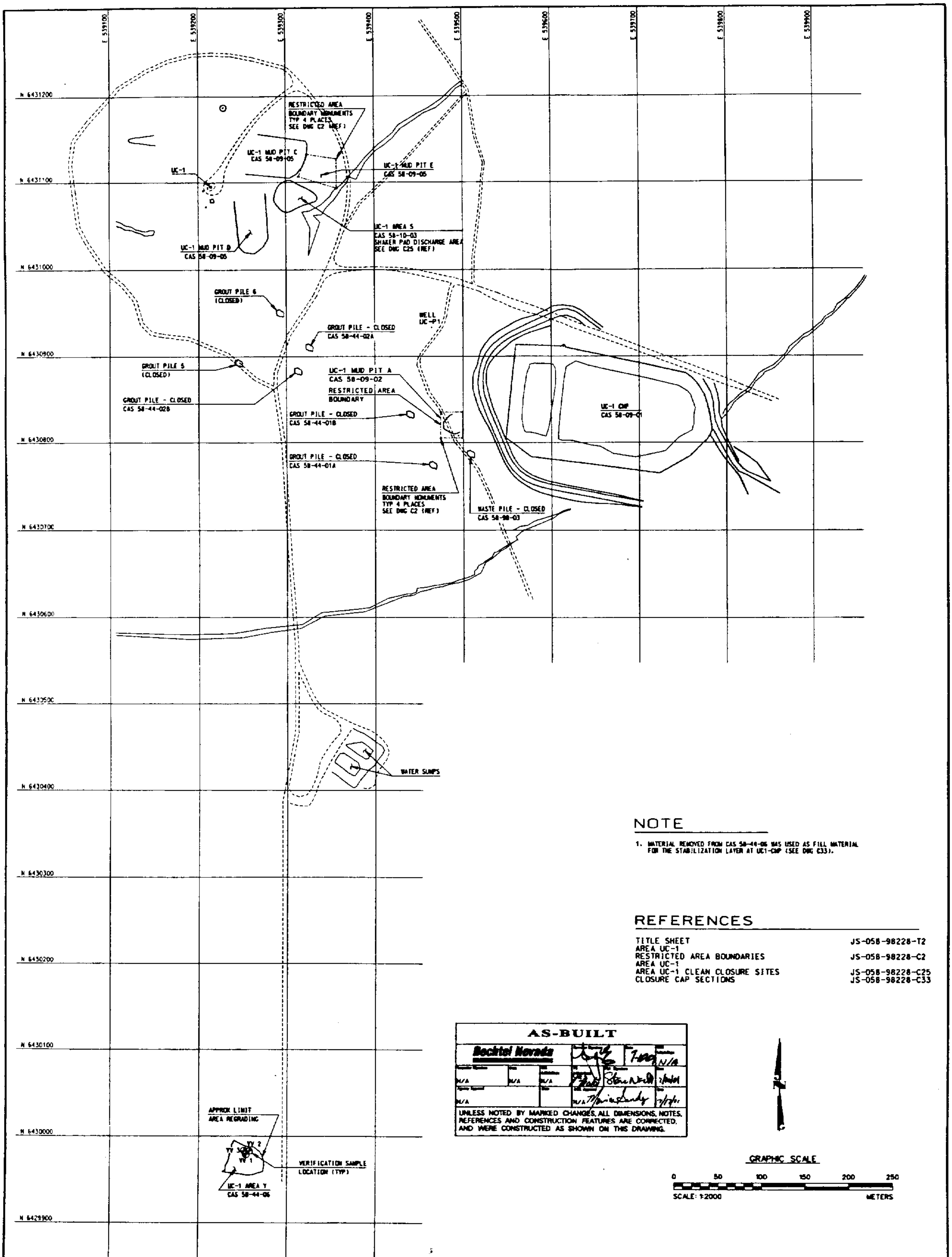
NO	DATE	REVISION DESCRIPTION
1		AS-BUILT, DATED 04/23/01
0		ISSUED FOR CONSTRUCTION 10/11/00

DESIGNER: DFE
DRAWN
CHECKED: DEY
SUBMITTED BECHTEL NEVADA: EDWARD C LANER 10/11/00
USER: STEVE NACHT 10/12/00
DEPT OF ENERGY PROJECT ENGINEER: PETER A. SANDERS 10/13/00
PROJECT NUMBER 98228A58 | PROJECT AUTH NO N/A | ACTIVITY CODE C8G01021
MAP REF NO: N/A

CENTRAL NEVADA TEST AREA —— AREA 58
CAU 417 CLOSURE
COMMUNICATION SITE PLAN

U.S. DEPARTMENT OF ENERGY
NEVADA OPERATIONS OFFICE
LAS VEGAS, NEVADA
Bechtel Nevada

DRAWING NUMBER JS-058-98228-W1
SHEET OF REV 1



NOTE

1. MATERIAL REMOVED FROM CAS 58-44-06 WAS USED AS FILL MATERIAL FOR THE STABILIZATION LAYER AT UC1-CMP (SEE DWG C33).

REFERENCES

TITLE SHEET	JS-058-98228-T2
AREA UC-1 RESTRICTED AREA BOUNDARIES	JS-058-98228-C2
AREA UC-1 AREA UC-1 CLEAN CLOSURE SITES	JS-058-98228-C25
CLOSURE CAP SECTIONS	JS-058-98228-C33

AS-BUILT

Bechtel Nevada

N/A N/A N/A N/A

UNLESS NOTED BY MARKED CHANGES, ALL DIMENSIONS, NOTES, REFERENCES AND CONSTRUCTION FEATURES ARE CORRECTED, AND WERE CONSTRUCTED AS SHOWN ON THIS DRAWING.

U.S. DEPARTMENT OF ENERGY
NEVADA OPERATIONS OFFICE
LAS VEGAS, NEVADA

Bechtel Nevada

CENTRAL NEVADA TEST AREA — AREA 58
CAU 417 CLOSURE

AREA UC-1
AREA Y CLEAN CLOSURE SITE

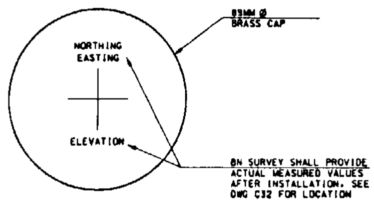
DESIGNED JAS / DRAWN JAS / CHECKED NOT / MAP REF NO. N/A

7/10/01 — 7/10/01 — 7/17/01

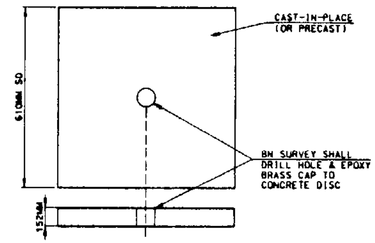
PROJECT NUMBER 98228A58 — PROJECT AUTH NO N/A — ACTIVITY CODE C8G01300

0 — AS-BUILT DATED 4/16/01

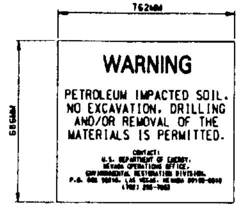
JS-058-98228-C37



BRASS CAP DETAIL (1) C32
NOT TO SCALE



CONCRETE MONUMENT DETAIL (2) C32
NOT TO SCALE



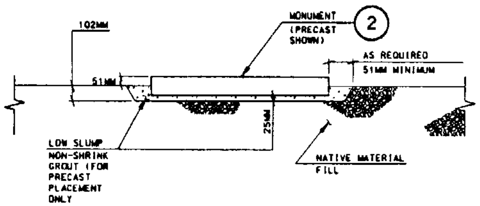
SIGN DETAIL (3) C32
NOT TO SCALE

SIGN NOTES

1. THIS DETAIL APPLIES TO SIGNS ON FENCE ONLY
2. SIGN IS WHITE WITH BLACK LETTERING.
3. MINIMUM LETTER/WORD HEIGHT (S): DANGER = 76MM, INFORMATION = 38MM, CONTACT = 19MM
4. SIGN STOCK THICKNESS IS 16 GAGE/0.0635 OR GREATER

FENCE NOTES

1. FENCING MEETS THE REQUIREMENTS OF SPECIFICATION SECTION 02831.
2. ALL FENCING COMPONENT DIMENSIONS SHOWN ARE NOMINAL. SEE NOTE 1.



INSTALLATION DETAIL (4) C32
NOT TO SCALE

DETAIL NOTES

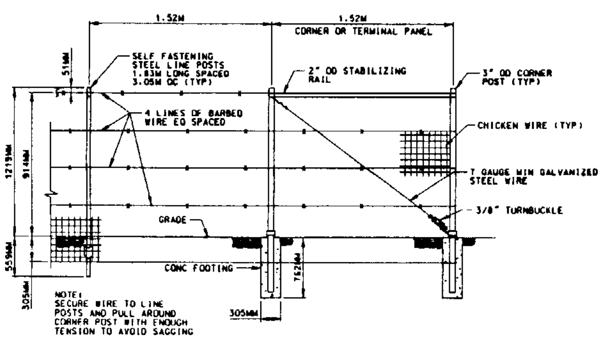
1. DETAIL 2 - SHOWS CONTROLLED DIMENSIONS FOR MONUMENT.
2. DETAIL 4 - FORM CAST-IN-PLACE CONCRETE MONUMENT TO THE DIMENSIONS SHOWN.

AS-BUILT			
Bechtel Nevada		7-6-01	N/A
N/A	N/A	N/A	7/10/01
N/A		N/A	7/17/01

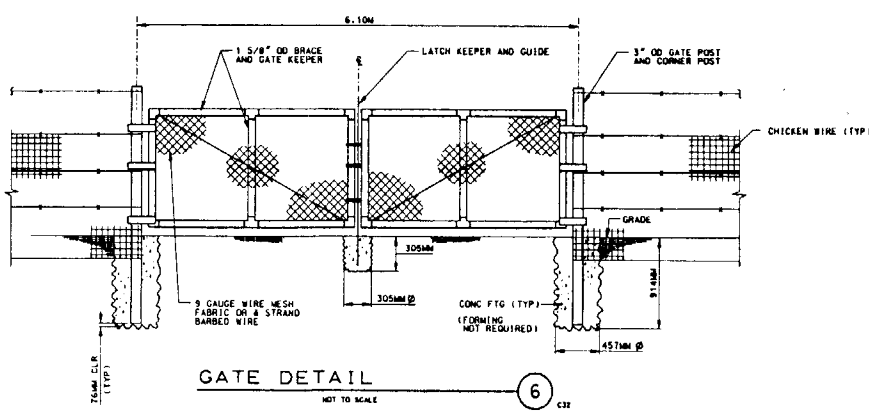
UNLESS NOTED BY MARKED CHANGES, ALL DIMENSIONS, NOTES, REFERENCES AND CONSTRUCTION FEATURES ARE CORRECTED, AND WERE CONSTRUCTED AS SHOWN ON THIS DRAWING.

REFERENCES

TITLE SHEET	JS-058-99228-T2
CLOSURE CAP SITE & GRADING PLAN	JS-058-98228-C32
CONSTRUCTION SPECIFICATION FOR CAU 417 REMEDIATION UCI-CMP, SECTION 02831	SP-98228A58-C0009.0



3 WIRE FENCE (5) C32
NOT TO SCALE



GATE DETAIL (6) C32
NOT TO SCALE

ORIGINAL SIGNED BY:

NO.	DATE	REVISION DESCRIPTION
0		ISSUED FOR CONSTRUCTION 04/05/00
1		AS-BUILT DATED 4/16/01

DESIGNED: NDJ	R. M. SCHECHTER	4/5/00
CHECKED: JAS	MICHAEL SHOTTON	4/5/00
N/A	MONICA SANCHEZ	4/7/00
N/A	98228A58 N/A	CEGO138B

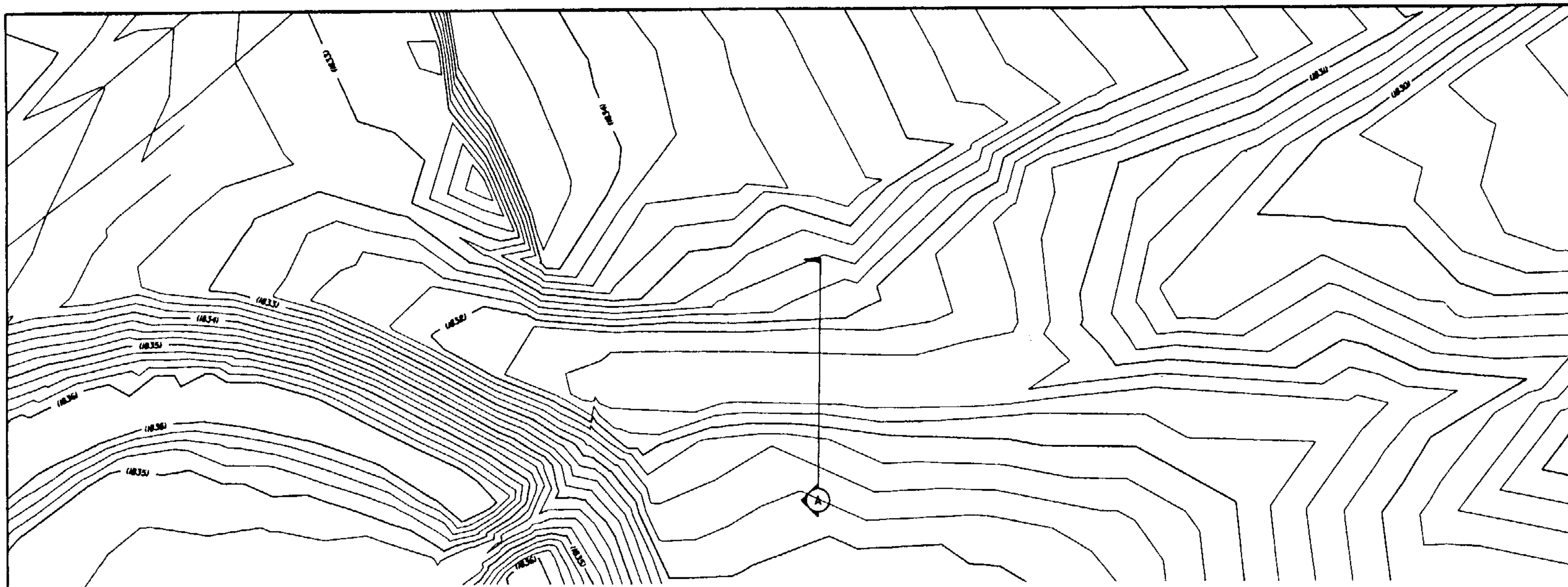
U.S. DEPARTMENT OF ENERGY
Bechtel Nevada

CENTRAL NEVADA TEST AREA — AREA 58
CAU 417 CLOSURE

DETAILS

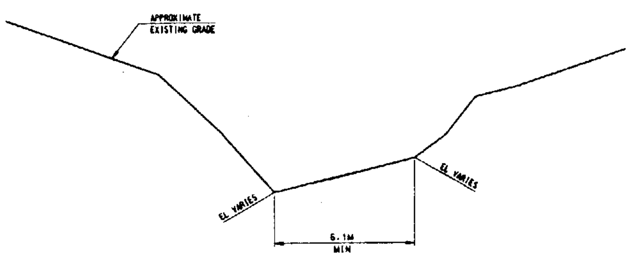
JS-058-98228-C36
REV 1

07/06/2001 09:35:21 AM g:\Dgn\98228a58\cad_data\uct\Option B\C36.dgn



PLAN

SCALE 1 : 1:250



SECTION

SCALE : HORIZONTAL : 1:100
VERTICAL : 1:20

REFERENCES

TITLE SHEET	JS-058-98228-T2
CONSTRUCTION SPECIFICATIONS FOR CAU 417 REMEDIATION UC1-CMP CLOSURE, SECTION 02222	SP-98228A58-C0009.0

GRAPHIC SCALE

SCALE 1:20 — 0, 1, 1.5, 2, 2.5 METERS

SCALE 1:100 — 0, 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12 METERS

SCALE 1:250 — 0, 10, 20, 30 METERS

AS-BUILT

Bechtel Nevada

N/A | N/A | N/A

UNLESS NOTED BY MARKED CHANGES, ALL DIMENSIONS, NOTES, REFERENCES AND CONSTRUCTION FEATURES ARE CORRECTED, AND WERE CONSTRUCTED AS SHOWN ON THIS DRAWING.

ORIGINAL SIGNED BY:

Designed	Submitted Bechtel Nevada	Date
BDJ	R. M. SCHECHTER	4/5/00
Drawn BDJ		
Checked JJS	MICHAEL SHOTTON, DEPT OF ENERGY PROJECT ENGINEER	4/6/00
N/A	MONICA SANCHEZ	4/7/00
N/A	Project number 98228A58, Project Auth No. N/A	Activity Code CBC01388

Rev	Date	Revision Description
D		ISSUED FOR CONSTRUCTION 04/05/00
1		REVISED & REDRAWN AS-BUILT DATED 4/16/01

U.S. DEPARTMENT OF ENERGY

NEVADA OPERATIONS OFFICE, LAS VEGAS, NEVADA

Bechtel Nevada

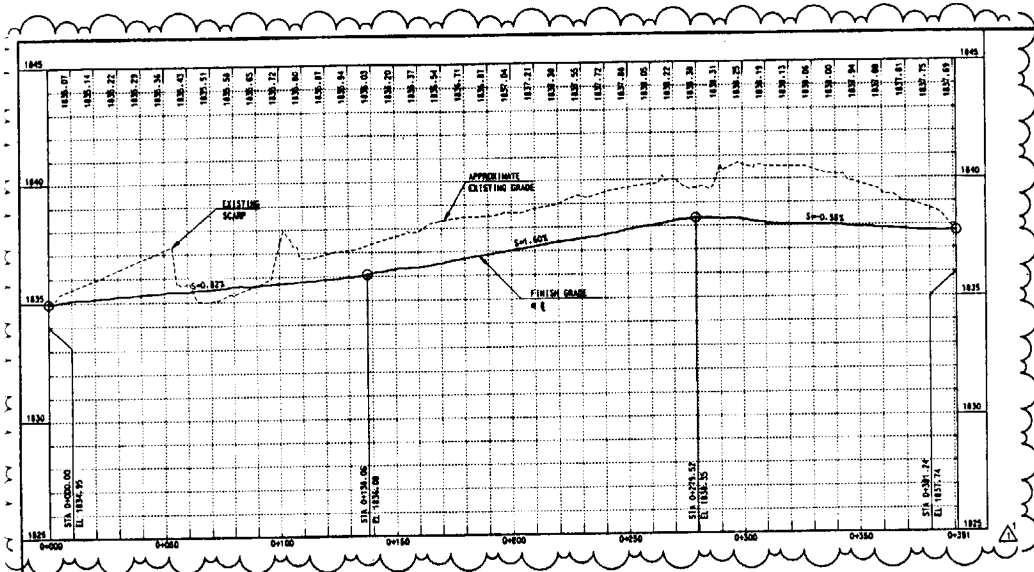
CENTRAL NEVADA TEST AREA — AREA 58

CAU 417 CLOSURE

EAST DIVERSION CHANNEL GRADING PLAN

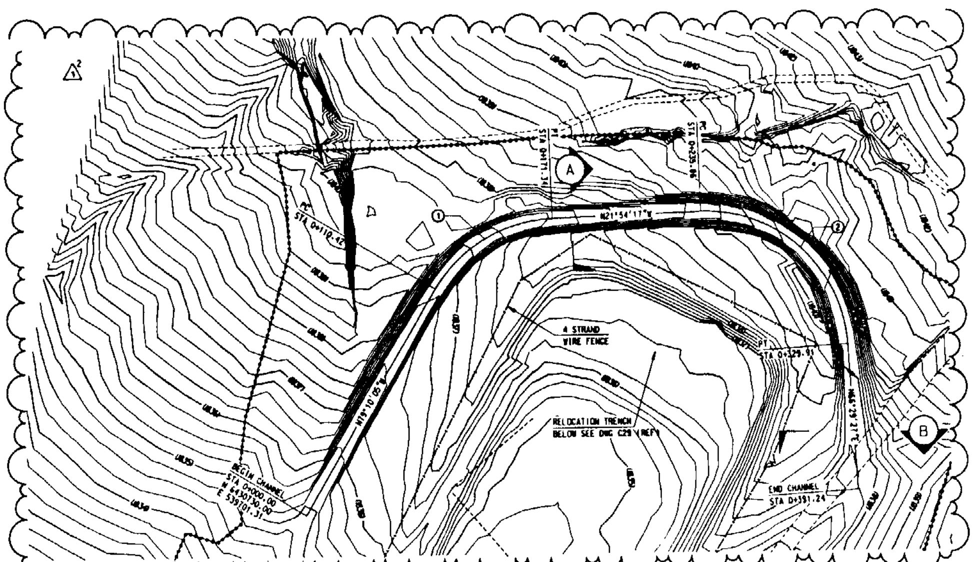
JS-058-98228-C35 REV 1

07/06/2001 09:35:52 Mg:\Dgn\98228a58\cad_data\uc1\Option B\C35.dgn



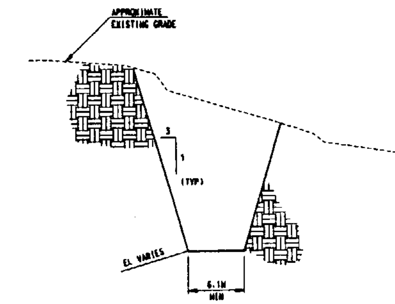
PROFILE

SCALE : HORIZONTAL: 1:1000 VERTICAL : 1:100



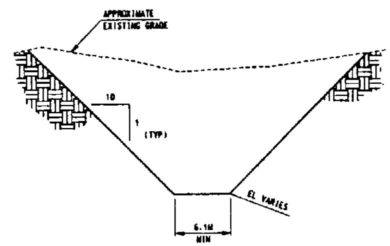
PLAN

SCALE : HORIZONTAL: 1:1000 CONTOUR INTERVAL = 0.25M



SECTION (A)

SCALE : HORIZ 1:250 VERT 1:25



SECTION (B)

SCALE : HORIZ 1:250 VERT 1:25

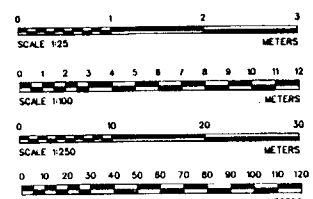
CURVE DATA

NO	Δ	R	T	L
1	51°15'47"	60.96M	33.28M	60.93M
2	88°23'44"	60.96M	59.28M	94.05M

REFERENCES

TITLE SHEET	JS-058-98228-T2
MUD PIT EXTENSION SITE & GRADING PLAN	JS-058-98228-C29

GRAPHIC SCALES



AS-BUILT

Bechtel Nevada

UNLESS NOTED BY MARKED CHANGES, ALL DIMENSIONS, NOTES, REFERENCES AND CONSTRUCTION FEATURES ARE CORRECTED, AND WERE CONSTRUCTED AS SHOWN ON THIS DRAWING.

1	AS-BUILT DATED 4/16/01	
0	ISSUED FOR CONSTRUCTION 04/05/00	

ORIGINAL SIGNED BY:

DESIGNED NDJ / DRAWN NDJ / CHECKED JAS	E. M. SCHECHTER	4/5/00
	MICHAEL SKOTTON, DEPT OF ENERGY PROJECT ENGINEER	4/6/00
N/A	MONICA SANCHEZ	4/7/00
N/A	98228A58 / N/A	CBC01388

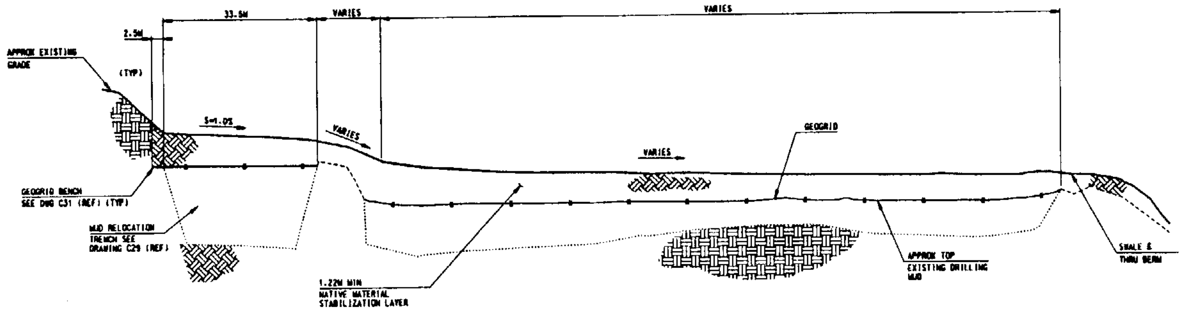
U.S. DEPARTMENT OF ENERGY
NEVADA OPERATIONS OFFICE, LAS VEGAS, NEVADA

Bechtel Nevada

CENTRAL NEVADA TEST AREA ——— AREA 58
CAU 417 CLOSURE
WEST DIVERSION CHANNEL
PLAN & PROFILE

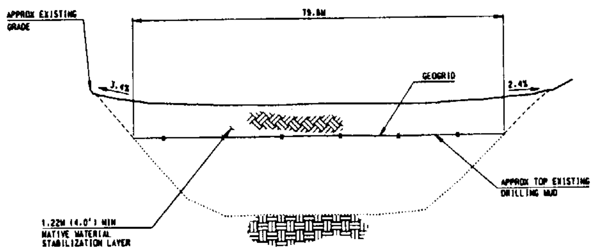
JS-058-98228-C34 REV 1

07/06/2001 09:36:16 ...\Dgn\98228a58\cad_data\uc1\Option B\C34.dgn



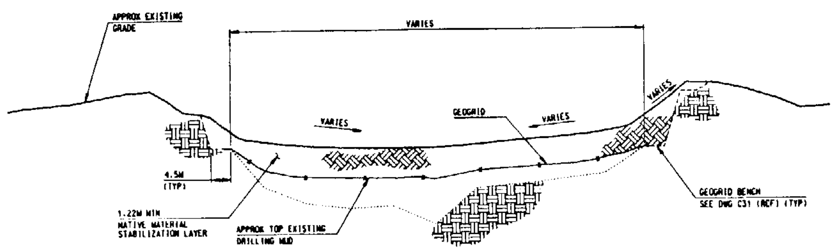
SECTION (A) C32

SCALE : HORIZONTAL : 1:500
VERTICAL : 1:100



SECTION (B) C32

SCALE : HORIZONTAL : 1:500
VERTICAL : 1:100



SECTION (C) C32

SCALE : HORIZONTAL : 1:500
VERTICAL : 1:100

PROJECT NOTES

1. STABILIZATION LAYER MEETS THE REQUIREMENTS OF SPECIFICATION SECTION 02223. (REF)
2. GEOGRID MEETS THE REQUIREMENTS OF SPECIFICATION SECTION 07537.
3. ALL DIMENSIONS/ELEVATIONS ARE APPROXIMATE, UNLESS INDICATED OTHERWISE.

REFERENCES

TITLE SHEET	JS-058-98228-T2
MUD PIT EXTENSION GRADING PLAN & SECTIONS	JS-058-98228-C29
GEOGRID BENCH SECTIONS	JS-058-98228-C31
CLOSURE CAP SITE & GRADING PLAN	JS-058-98228-C32
CONSTRUCTION SPECFICATION FOR CAU 417 REMEDIATION UC1-CMP CLOSURE	SP-98228A58-C0009.0

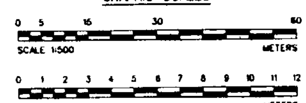
AS-BUILT

Bechtel Nevada

N/A N/A N/A N/A

UNLESS NOTED BY MARKED CHANGES, ALL DIMENSIONS, NOTES, REFERENCES AND CONSTRUCTION FEATURES ARE CORRECTED, AND WERE CONSTRUCTED AS SHOWN ON THIS DRAWING.

GRAPHIC SCALES



ORIGINAL SIGNED BY:

DESIGNED NDJ	SUBMITTED BECHTEL NEVADA K. W. SCHECHTER 4/5/00
DRAWN NDJ	
CHECKED JAS	MICHAEL SHOTTON 4/5/00
CERTIF N/A	DEPT OF ENERGY PROJECT ENGINEER
MAP REF NO. N/A	MONICA SANCHEZ 4/7/00 PROJECT NUMBER 98228A58 PROJECT WORK NO N/A ACTIVITY CODE C8G01388

NO	DATE	REVISION DESCRIPTION
0		ISSUED FOR CONSTRUCTION 04/05/00
1		REVISED & REDRAWN AS-BUILT DATED 4/16/01

CENTRAL NEVADA TEST AREA —— AREA 58

CAU 417 CLOSURE

CLOSURE CAP SECTIONS

U.S. DEPARTMENT OF ENERGY

NEVADA OPERATIONS OFFICE LAS VEGAS, NEVADA

Bechtel Nevada

JS-058-98228-C33

SHEET OF REV 1

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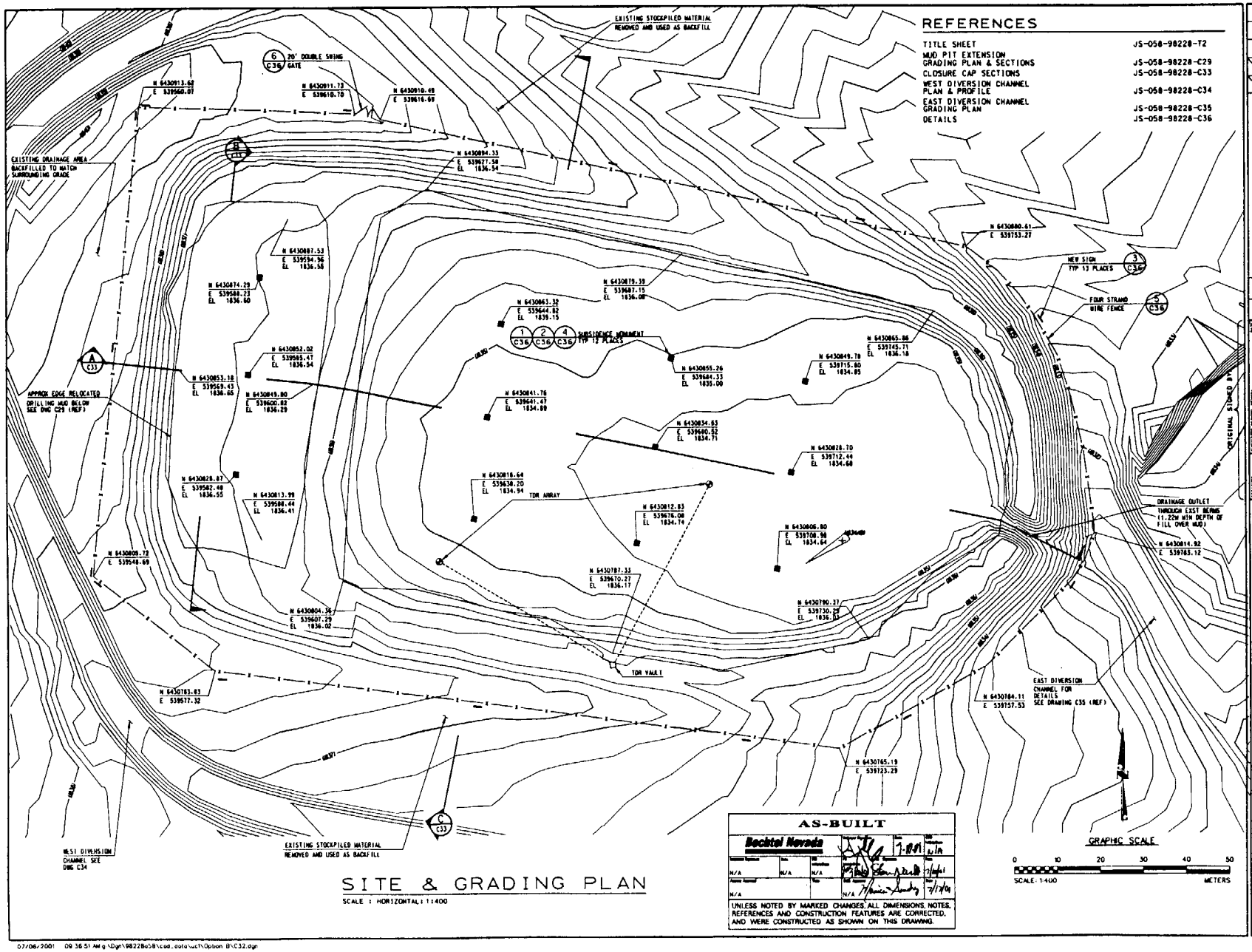

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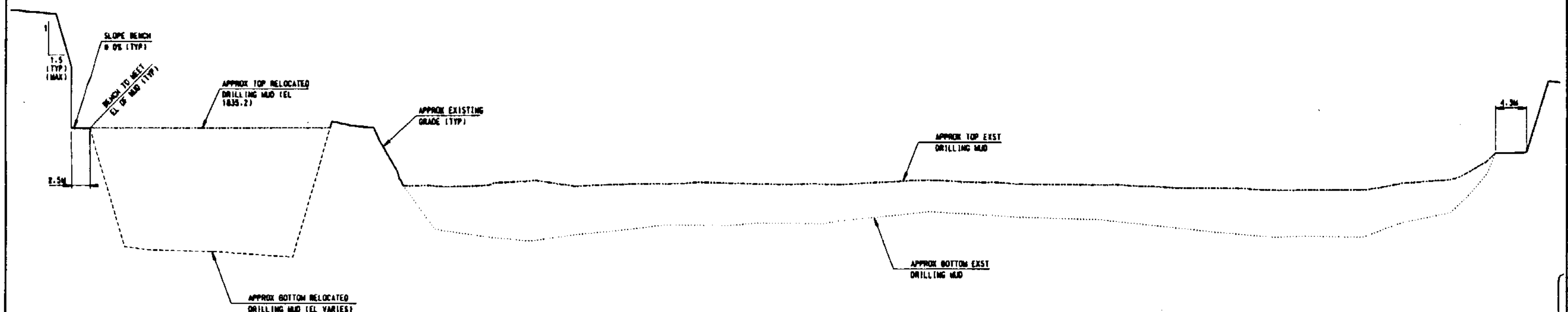
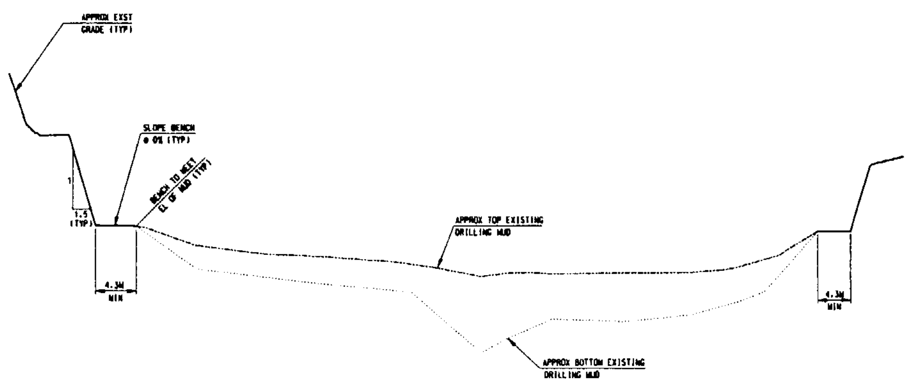
REFERENCES

TITLE SHEET	JS-058-98228-T2
MUD PIT EXTENSION GRADING PLAN & SECTIONS	JS-058-98228-C29
GEOGRID BENCH SITE & GRADING PLAN	JS-058-98228-C30
CONSTRUCTION SPECIFICATIONS FOR CAU 417 REMEDIATION UC1-CMP CLOSURE, SECTION 02222	SP-98228A58-C0009.0



SECTION (A) C30

SCALE : HORIZ. = 1:300
VERT. = 1:60



SECTION (B) C30

SCALE : HORIZ. = 1:300
VERT. = 1:60

AS-BUILT

Bechtel Nevada

N/A N/A N/A

UNLESS NOTED BY MARKED CHANGES, ALL DIMENSIONS, NOTES, REFERENCES AND CONSTRUCTION FEATURES ARE CORRECTED, AND WERE CONSTRUCTED AS SHOWN ON THIS DRAWING.

GRAPHIC SCALE

0 5 10 15 20 25 30 35
SCALE 1:300 METERS

0 1 2 3 5 7
SCALE 1:60 METERS

NO	DATE	REVISION DESCRIPTION
0		ISSUED FOR CONSTRUCTION 04/05/00
1		REVISED & REDRAWN AS-BUILT DATED 4/16/01

ORIGINAL SIGNED BY:

DESIGNED: RDJ — SUBMITTED BECHTEL NEVADA: E. M. SCHECHTER — 4/5/00
DRAWN: RDJ
CHECKED: JAS — DEPT OF ENERGY PROJECT ENGINEER: MICHAEL SHEDTON — 4/6/00
N/A — MONICA SANCHEZ — 4/7/00
PROJECT NUMBER: 98228A58 — PROJECT AUTH NO: N/A — ACTIVITY CODE: C8G01388
MAP REF NO: N/A

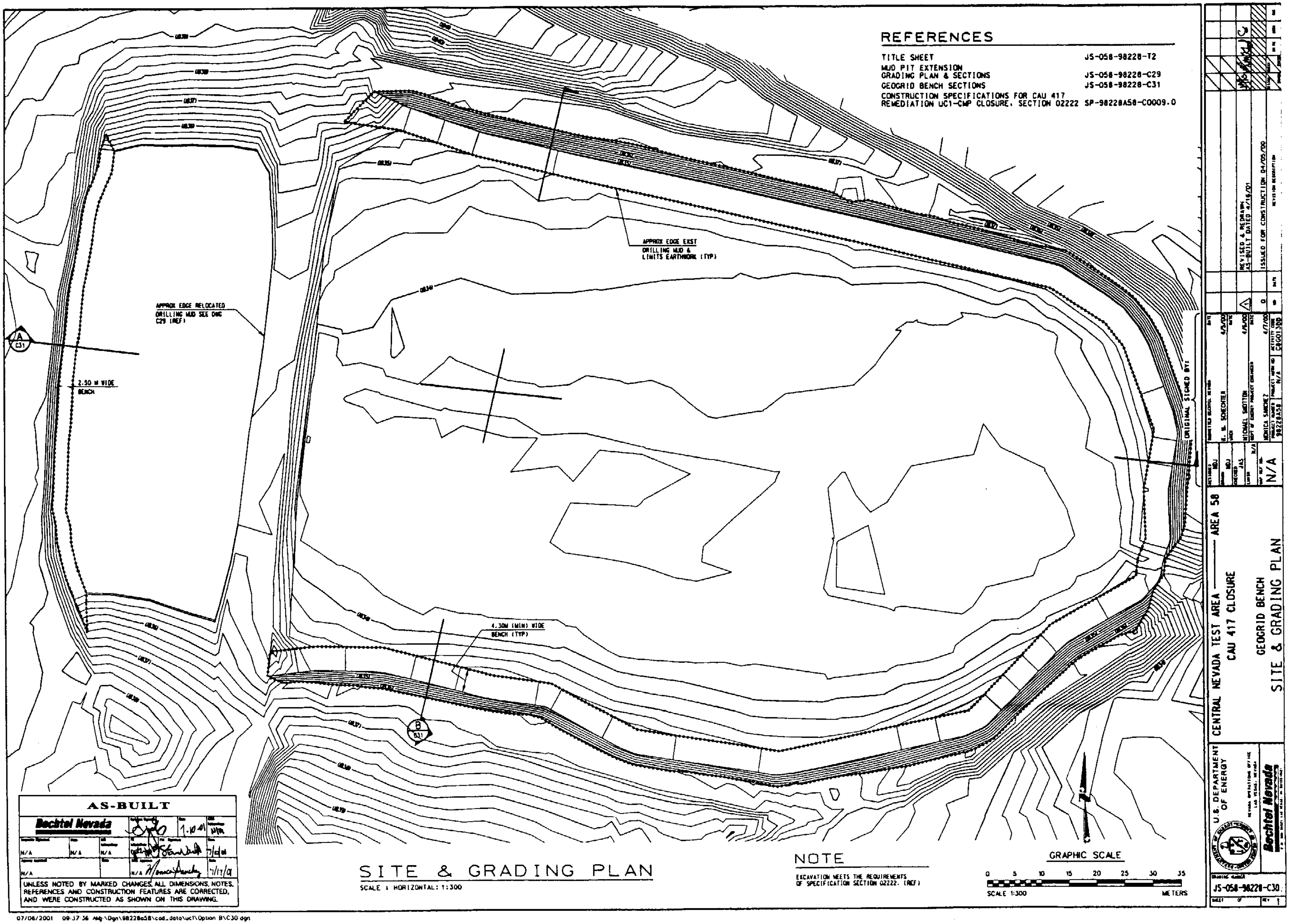
CENTRAL NEVADA TEST AREA —— AREA 58
CAU 417 CLOSURE
GEOGRID BENCH
SECTIONS

U.S. DEPARTMENT OF ENERGY
NEVADA OPERATIONS OFFICE
LAS VEGAS, NEVADA

Bechtel Nevada

DRAWING NUMBER: JS-058-98228-C31
SHEET OF REV 1

07/06/2001 09:37:11 AM g:\Dgn\98228a58\cad_data\uc1\Option B\C31.dgn


REFERENCES
TITLE SHEET JS-058-98228-T2
MUD PIT EXTENSION
GRADING PLAN & SECTIONS JS-058-98228-C29
GEOGRID BENCH SECTIONS JS-058-98228-C31
CONSTRUCTION SPECIFICATIONS FOR CAU 417
REMEDIATION UC1-CMP CLOSURE, SECTION 02222 SP-98228A58-C0009.0
APPROX EDGE EXST DRILLING MUD & LIMITS EARTHWORK (TYP)
APPROX EDGE RELOCATED DRILLING MUD SEE DWG C29 (REF)
2.50 M WIDE BENCH
4.30M (MIN) WIDE BENCH (TYP)
ORIGINAL SIGNED BY:
AS-BUILT
Bechtel Nevada
UNLESS NOTED BY MARKED CHANGES, ALL DIMENSIONS, NOTES, REFERENCES AND CONSTRUCTION FEATURES ARE CORRECTED, AND WERE CONSTRUCTED AS SHOWN ON THIS DRAWING.
SITE & GRADING PLAN
SCALE : HORIZONTAL: 1:300
NOTE
EXCAVATION MEETS THE REQUIREMENTS OF SPECIFICATION SECTION 02222. (REF)
GRAPHIC SCALE
0 5 10 15 20 25 30 35
SCALE 1:300 METERS
REVISED & REDRAWN AS-BUILT DATED 4/16/01
ISSUED FOR CONSTRUCTION 04/05/00
R. W. SCHECHTER 4/5/00
MICHAEL SKOTTON 4/6/00
MONICA SANCHEZ 4/7/00
98228A58 N/A C8G01300
N/A
CENTRAL NEVADA TEST AREA — AREA 58
CAU 417 CLOSURE
GEOGRID BENCH
SITE & GRADING PLAN
U.S. DEPARTMENT OF ENERGY
NEVADA OPERATIONS OFFICE
LAS VEGAS, NEVADA
Bechtel Nevada
JS-058-98228-C30
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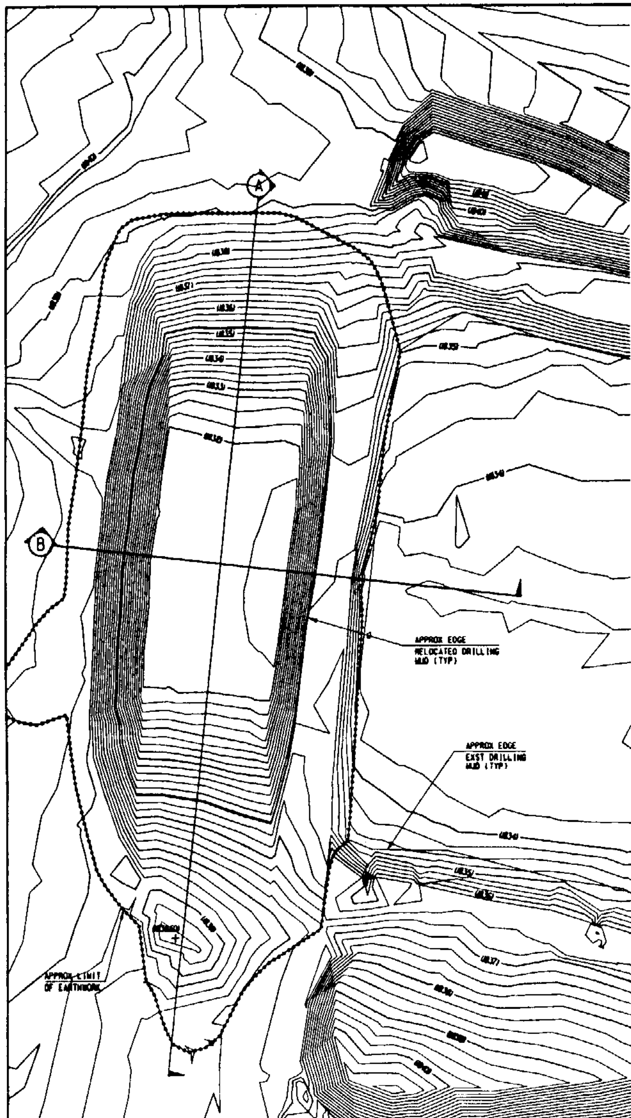
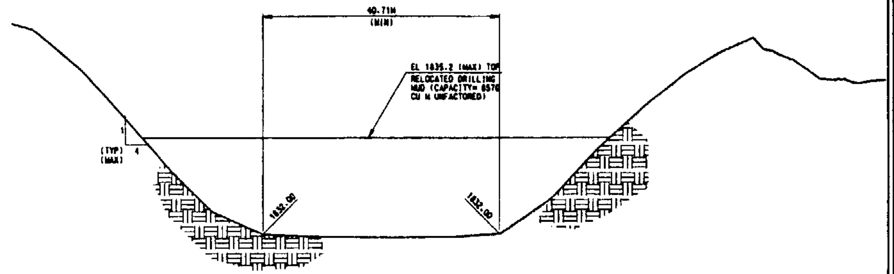
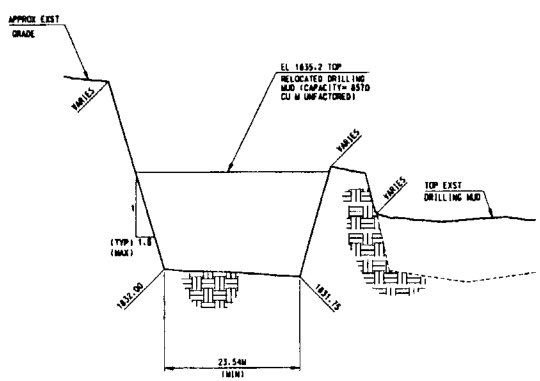


SITE PLAN
SCALE : 1:400
CONTOUR INTERVAL = 0.25M



SECTION (A)
SCALE : HORIZ. = 1:400
VERT. = 1:80



SECTION (B)
SCALE : HORIZ. = 1:400
VERT. = 1:80

REFERENCES

TITLE SHEET JS-058-98228-T2

AS-BUILT

Bechtel Nevada

N/A	N/A	N/A	7/17/01
N/A			7/17/01

UNLESS NOTED BY MARKED CHANGES, ALL DIMENSIONS, NOTES, REFERENCES AND CONSTRUCTION FEATURES ARE CORRECTED, AND WERE CONSTRUCTED AS SHOWN ON THIS DRAWING.

GRAPHIC SCALE

0 10 20 30 40 50 METERS — SCALE: 1:400

0 2 4 6 8 10 METERS — SCALE 1:80

ORIGINAL SIGNED BY:

E. M. SCHECHTER	SUBMITTED BECHTEL NEVADA	4/5/00
MICHAEL SHOTTON	DEPT OF ENERGY PROJECT ENGINEER	4/6/00
MONICA SANCHEZ		4/7/00
98228A58	N/A	C8001388

DESIGNED SBJ · DRAWN SBJ · CHECKED JAS · N/A

1	REVISED & REDRAWN AS-BUILT DATED 4/16/01	
0	ISSUED FOR CONSTRUCTION 04/05/00	

U.S. DEPARTMENT OF ENERGY
NEVADA OPERATIONS OFFICE
LAS VEGAS, NEVADA

Bechtel Nevada

CENTRAL NEVADA TEST AREA —— AREA 58
CAU 417 CLOSURE

MUD PIT EXTENSION
GRADING PLAN & SECTIONS

JS-058-98228-C29 REV 1

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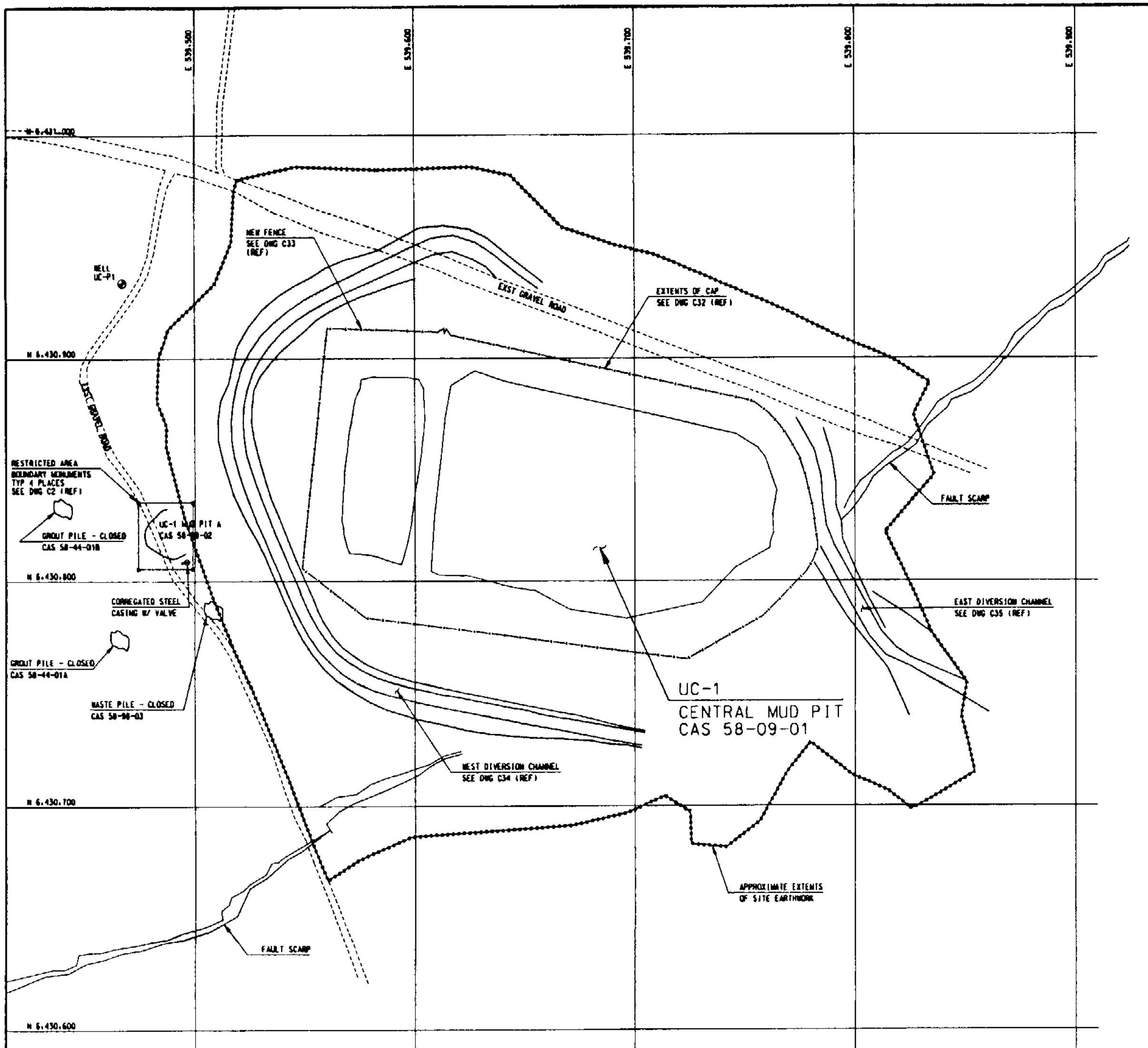

SITE PLAN

SCALE 1:1000

GRAPHIC SCALE

0 20 40 60 80 100 120

SCALE 1:1000 METERS

PROJECT NOTES

1. BORROW SOILS WERE OBTAINED FROM THE WEST DIVERSION CHANNEL (SEE DWG C34). TRENCH MODIFICATIONS (SEE DWG C29), THE GEOGRID BENCH (SEE DWG C30), AND THE EAST BERMS AROUND UC1-CAP (SEE DWG C32).
2. SOURCE OF CONSTRUCTION WATER WAS WELL HTH-2, LOCATED AT UC1, SOUTH OF UC1-CAP. SEE VICINITY MAP, DRAWING C24.
3. BASIS FOR HORIZONTAL CONTROL IS THE NORTH AMERICAN DATUM OF 1983, STATE PLANE, NEVADA CENTRAL ZONE, METERS.
4. BASIS FOR VERTICAL CONTROL IS THE NORTH AMERICAN VERTICAL DATUM OF 1929, METERS.

MATERIAL QUANTITY TABLE	
MATERIAL	QTY
NATIVE MATERIAL STABILIZATION & GENERAL SITE FILL	37260M^3
CHANNEL & BERM EXCAVATION	22590M^3
GEOGRID BENCH EXCAVATION	2630M^3
TRENCH EXCAVATION	10830M^3
GEOGRID (54 ROLLS MIN)	20390M^2

* QTY'S ARE BANKED M^3
CF= 1.3
FF= 1.3

GEOGRID QTY INCLUDES 10% FOR WASTE/ DAMAGE

AS-BUILT

Bechtel Nevada				
N/A	N/A	N/A	[signature] 7/10/01	N/A
			[signature]	7/10/01
N/A			N/A [signature]	7/17/01

UNLESS NOTED BY MARKED CHANGES, ALL DIMENSIONS, NOTES, REFERENCES AND CONSTRUCTION FEATURES ARE CORRECTED, AND WERE CONSTRUCTED AS SHOWN ON THIS DRAWING.

REFERENCES

TITLE SHEET	JS-058-98228-T2
RESTRICTED AREA BOUNDARIES	JS-058-98228-C2
VICINITY MAP	JS-058-98228-C24
MUD PIT EXTENSION GRADING PLAN & SECTIONS	JS-058-98228-C29
GEOGRID BENCH SITE & GRADING PLAN	JS-058-98228-C30
CLOSURE CAP SITE & GRADING PLAN	JS-058-98228-C32
CLOSURE CAP SECTIONS	JS-058-98228-C33
WEST DIVERSION CHANNEL PLAN & PROFILE	JS-058-98228-C34
EAST DIVERSION CHANNEL GRADING PLAN	JS-058-98228-C35

NO	DATE	REVISION DESCRIPTION
1		REVISED & REDRAWN AS-BUILT DATED 4/16/01
0	4/7/00	ISSUED FOR CONSTRUCTION 04/05/00

ORIGINAL SIGNED BY:

DESIGNED: RDJ — G. N. SCHECHTER 4/5/00
DRAWN: RDJ
CHECKED: JAS — MICHAEL SHOTTON 4/6/00
ENGINEER: N/A — MONICA SANCHEZ 4/7/00
PROJECT NUMBER 98228A58 — ACTIVITY CODE C8C01388
N/A

CENTRAL NEVADA TEST AREA — AREA 58

CAU 417 CLOSURE

SITE PLAN

U.S. DEPARTMENT OF ENERGY

NEVADA OPERATIONS OFFICE LAS VEGAS, NEVADA

Bechtel Nevada

JS-058-98228-C28

REV 1

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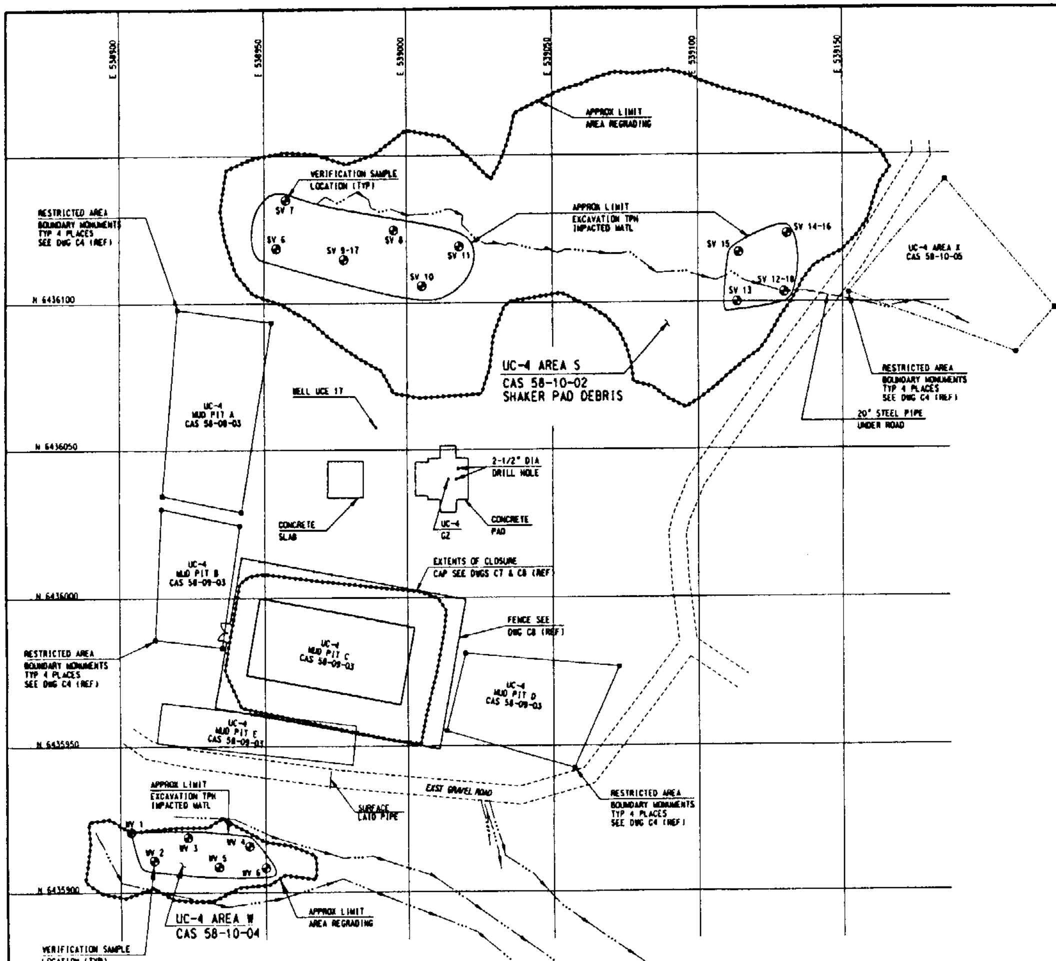

UC-4 CLEAN CLOSURE SITES
SCALE 1:1800

NOTE

1. MATERIAL REMOVED FROM UC-4 AREA S (CAS 58-10-02) WAS RELOCATED TO THE MUD RELOCATION TRENCH AT UC1-CMP (SEE DWG C29).
2. MATERIAL REMOVED FROM UC-4 AREA W (CAS 58-10-04) WAS USED AS FILL MATERIAL FOR THE STABILIZATION LAYER AT UC1-CMP (SEE DWG C33).

REFERENCES

TITLE SHEET	JS-058-98228-T2
RESTRICTED AREA BOUNDARIES	JS-058-98228-C4
MUD PIT EXTENSION SITE & GRADING PLAN (PHASE 1 WORK PLAN)	JS-058-98228-C7
CLOSURE CAP GRADING PLAN & SECTIONS (PHASE 1 WORK PLAN)	JS-058-98228-C8
MUD PIT EXTENSION GRADING PLAN & SECTIONS	JS-058-98228-C29
CLOSURE CAP SECTIONS	JS-058-98228-C33

GRAPHIC SCALE
0 20 40 60 80 100
SCALE: 1:800 METERS

AS-BUILT
Bechtel Nevada
N/A N/A N/A N/A
7-10-01 7/12/01 7/17/01

UNLESS NOTED BY MARKED CHANGES, ALL DIMENSIONS, NOTES, REFERENCES AND CONSTRUCTION FEATURES ARE CORRECTED, AND WERE CONSTRUCTED AS SHOWN ON THIS DRAWING.

ORIGINAL SIGNED BY:

NO	DATE	REVISION DESCRIPTION
0		ISSUED FOR CONSTRUCTION 04/05/00
1		REVISED AND REDRAWN AS-BUILT DATED 4/16/01

SUBMITTED BECHTEL NEVADA: R. M. SCHECHTER 4/5/00
DEPT OF ENERGY PROJECT ENGINEER: MICHAEL SHOTTON 4/6/00
MONICA SANCHEZ 4/7/00
PROJECT NUMBER 98228A58 — ACTIVITY CODE C8C01388 — N/A

U.S. DEPARTMENT OF ENERGY
NEVADA OPERATIONS OFFICE
LAS VEGAS, NEVADA
Bechtel Nevada

CENTRAL NEVADA TEST AREA — AREA 58
CAU 417 CLOSURE
AREA UC-4
CLEAN CLOSURE SITES

N/A
JS-058-98228-C27
REV 1

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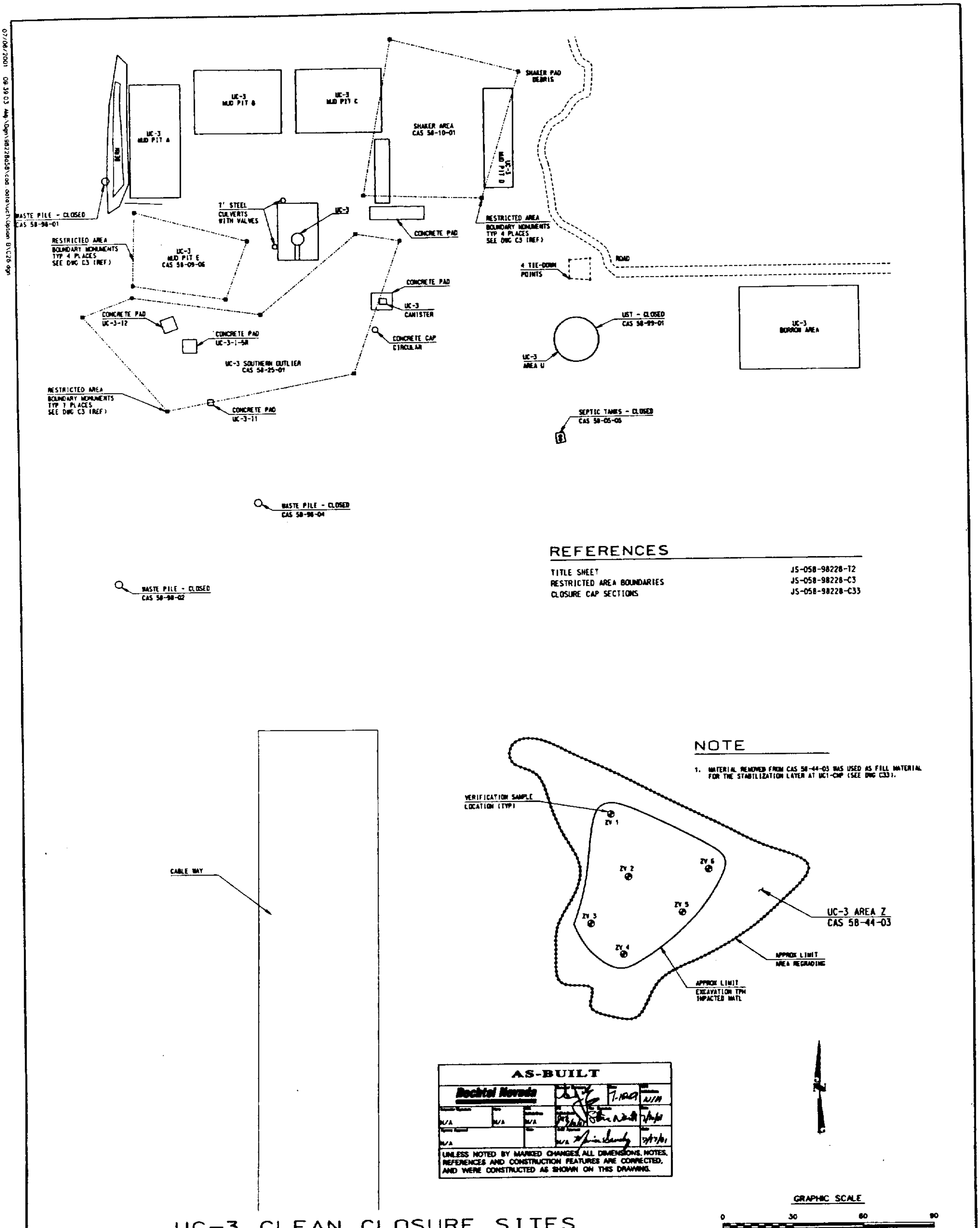


REFERENCES

TITLE SHEET	JS-058-98228-T2
RESTRICTED AREA BOUNDARIES	JS-058-98228-C3
CLOSURE CAP SECTIONS	JS-058-98228-C33

NOTE

1. MATERIAL REMOVED FROM CAS 58-44-03 WAS USED AS FILL MATERIAL FOR THE STABILIZATION LAYER AT UC1-CMP (SEE DWG C33).

AS-BUILT

Bechtel Nevada

N/A N/A N/A N/A

UNLESS NOTED BY MARKED CHANGES, ALL DIMENSIONS, NOTES, REFERENCES AND CONSTRUCTION FEATURES ARE CORRECTED, AND WERE CONSTRUCTED AS SHOWN ON THIS DRAWING.

UC-3 CLEAN CLOSURE SITES

SCALE : 1:750

ORIGINAL SIGNED BY:

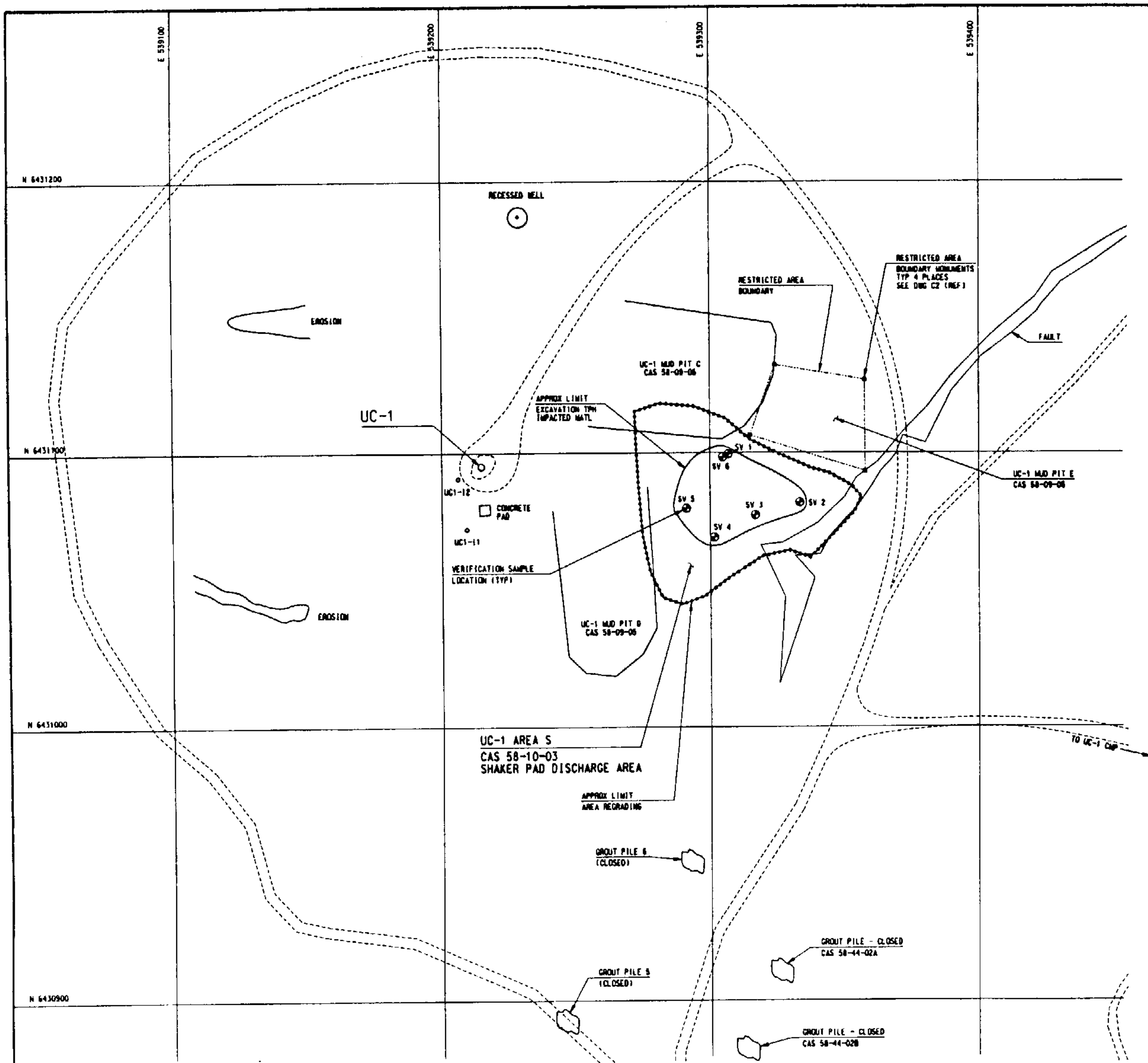
U.S. DEPARTMENT OF ENERGY
NEVADA OPERATIONS OFFICE
LAS VEGAS, NEVADA
Bechtel Nevada

CENTRAL NEVADA TEST AREA — AREA 58
CAU 417 CLOSURE
AREA UC-3
CLEAN CLOSURE SITES

JS-058-98228-C26

DESIGNED MDJ	SUBMITTED BECHTEL NEVADA: R. M. SCHECHTER	4/5/00
DRAWN MDJ	USER: MICHAEL SHOTTON	4/5/00
CHECKED JAS	DEPT OF ENERGY PROJECT ENGINEER: MONICA SANCHEZ	4/7/00
ENGR N/A		
MAP REF NO. N/A	PROJECT NUMBER 98228A58 / PROJECT AUTH NO N/A / ACTIVITY CODE C8G013BB	

NO	DATE	REVISION DESCRIPTION
1		REVISED AND REDRAWN AS-BUILT DATED 4/16/01
0		ISSUED FOR CONSTRUCTION 04/05/00



UC-1 CLEAN CLOSURE SITES

SCALE 1:800

NOTE

1. MATERIAL REMOVED FROM CAS 58-10-03 WAS USED AS FILL MATERIAL FOR THE STABILIZATION LAYER AT UC1-CAP (SEE DWG C33).
2. ALL GROUT PILES WERE REMOVED. LOCATIONS SHOWN FOR RECORD PURPOSES ONLY.

REFERENCES

TITLE SHEET	JS-058-98220-T2
RESTRICTED AREA BOUNDARIES	JS-058-98220-C2
CLOSURE CAP SECTIONS	JS-058-98220-C33

AS-BUILT

Bechtel Nevada

N/A N/A 7/6/01

N/A 7/9/01

UNLESS NOTED BY MARKED CHANGES, ALL DIMENSIONS, NOTES, REFERENCES AND CONSTRUCTION FEATURES ARE CORRECTED, AND WERE CONSTRUCTED AS SHOWN ON THIS DRAWING.

GRAPHIC SCALE

0 20 40 60 80 100 METERS

SCALE: 1:800

ORIGINAL SIGNED BY:

U.S. DEPARTMENT OF ENERGY

NEVADA OPERATIONS OFFICE LAS VEGAS, NEVADA

Bechtel Nevada

CENTRAL NEVADA TEST AREA — AREA 58

CAU 417 CLOSURE

AREA UC-1

CLEAN CLOSURE SITES

DESIGNED NDJ	SUBMITTED BECHTEL NEVADA: E. M. SCHECHTER	4/5/00
DRAWN NDJ	NNSA: MICHAEL SHOTTON	4/6/00
CHECKED JAS	DEPT OF ENERGY PROJECT ENGINEER: MONICA SANCHEZ	4/7/00
MAP REF NO. N/A	PROJECT NUMBER 98220A58 / PROJECT AUTH NO N/A / ACTIVITY CODE C8C013B8	

REV	DATE	REVISION DESCRIPTION
1		REVISED AND REDRAWN AS-BUILT DATED 4/16/01
0		ISSUED FOR CONSTRUCTION 04/05/00

DRAWING NUMBER JS-058-98220-C25

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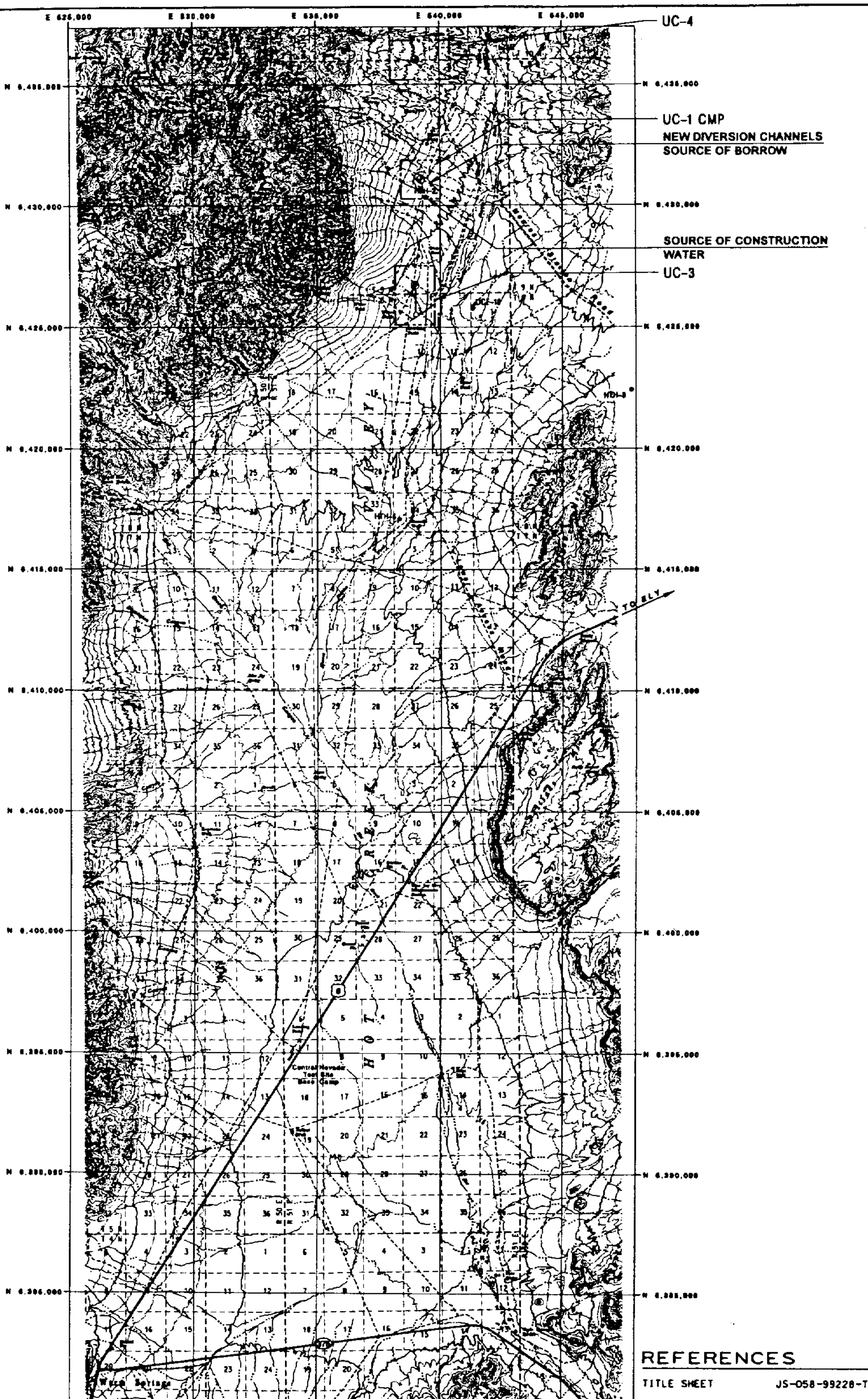
07/06/2001 09:39:49 ANg:\Dgn\98220a58\cad_data\uc1\Option B\C25.dgn



AS-BUILT

UNLESS NOTED BY MARKED CHANGES ALL DIMENSIONS, NOTES, REFERENCES AND CONSTRUCTION FEATURES ARE CONNECTED AND WERE CONSTRUCTED AS SHOWN ON THIS DRAWING.

REFERENCES

TITLE SHEET JS-058-99228-T2

GRAPHIC SCALE

0 1 3 5 KILOMETERS

CONTOUR INTERVAL 25 METERS

ORIGINAL SIGNED BY:

U.S. DEPARTMENT OF ENERGY

NEVADA OPERATIONS OFFICE
LAS VEGAS, NEVADA

Bechtel Nevada

CENTRAL NEVADA TEST AREA — AREA 58

CAU 417 CLOSURE

VICINITY MAP

DESIGNED NDJ	SUBMITTED BECHTEL NEVADA	K. M. SCHECHTER	4/5/00
DRAWN NDJ	USER	MICHAEL SHOTTEN	4/6/00
CHECKED JAS	DEPT OF ENERGY PROJECT ENGINEER	MONICA SANCHEZ	4/7/00
ENVIR N/A	PROJECT NUMBER 98228A58	PROJECT AUTH NO N/A	ACTIVITY CODE CBG01388
MAP REF NO. N/A			

NO	DATE	REVISION DESCRIPTION
1		AS-BUILT DATED 4/16/01
D		ISSUED FOR CONSTRUCTION 04/05/00

JS-058-99228-C24

UNITED STATES DEPARTMENT OF ENERGY

NEVADA OPERATIONS OFFICE

LAS VEGAS, NEVADA

CENTRAL NEVADA TEST AREA (CNTA)
CAU 417 CLOSURE

AREA 58

INDEX

DRAWING NUMBER		DRAWING TITLE
TITLE		
JS-058-98228-T2	REV 1	TITLE SHEET
CIVIL		
JS-058-98228-C24	REV 1	VICINITY MAP
JS-058-98228-C25	REV 1	AREA UC-1 CLEAN CLOSURE SITES
JS-058-98228-C26	REV 1	AREA UC-3 CLEAN CLOSURE SITES
JS-058-98228-C27	REV 1	AREA UC-4 CLEAN CLOSURE SITES
JS-058-98228-C28	REV 1	SITE PLAN
JS-058-98228-C29	REV 1	MUD PIT EXTENSION SITE AND GRADING PLAN & SECTIONS
JS-058-98228-C30	REV 1	GEOGRID BENCH SITE & GRADING PLAN
JS-058-98228-C31	REV 1	GEOGRID BENCH SECTIONS
JS-058-98228-C32	REV 1	CLOSURE CAP SITE & GRADING PLAN
JS-058-98228-C33	REV 1	CLOSURE CAP SECTIONS
JS-058-98228-C34	REV 1	WEST DIVERSION CHANNEL PLAN & PROFILE
JS-058-98228-C35	REV 1	NORTH DIVERSION CHANNEL GRADING PLAN
JS-058-98228-C36	REV 1	DETAILS
JS-058-98228-C37	REV 0	UC-1 AREA Y CLEAN CLOSURE SITE
JS-058-98228-W1	REV 1	COMMUNICATIONS SITE PLAN
JS-058-98228-W2	REV 1	DETAILS/SECTIONS

SCOPE OF WORK

THE FY 2000 SCOPE OF WORK FOR THIS PROJECT INCLUDED MODIFICATION OF THE EXISTING MUD RELOCATION TRENCH, CONSTRUCTION OF A FLOOD DIVERSION CHANNEL, CONSTRUCTION OF A BREACH THRU THE SCARP AT EAST END OF UC1-CMP AND CONSTRUCTION OF A CAP OVER BOTH UC1-CMP AND THE MUD RELOCATION TRENCH. WORK ALSO INCLUDED CLEAN CLOSURE OF 5 CAS'S, AS-BUILT SURVEYING OF SUBSIDENCE MONUMENTS, AND STAMPING OF SURVEY MARKERS.

PROJECT NOTES

ALL CONSTRUCTION DOCUMENTATION, SPECIAL FEATURES, MATERIALS, TESTS AND DETAILS SHALL CONFORM TO THE "CONSTRUCTION SPECIFICATIONS FOR CAU 417 CLOSURE" AND THE "CORRECTIVE ACTION UNIT 417 CENTRAL NEVADA TEST AREA SURFACE, NEVADA SAMPLING, INSPECTION, TESTING, AND ACCEPTANCE (SITA) PLAN".

AS-BUILT

Bechtel Nevada

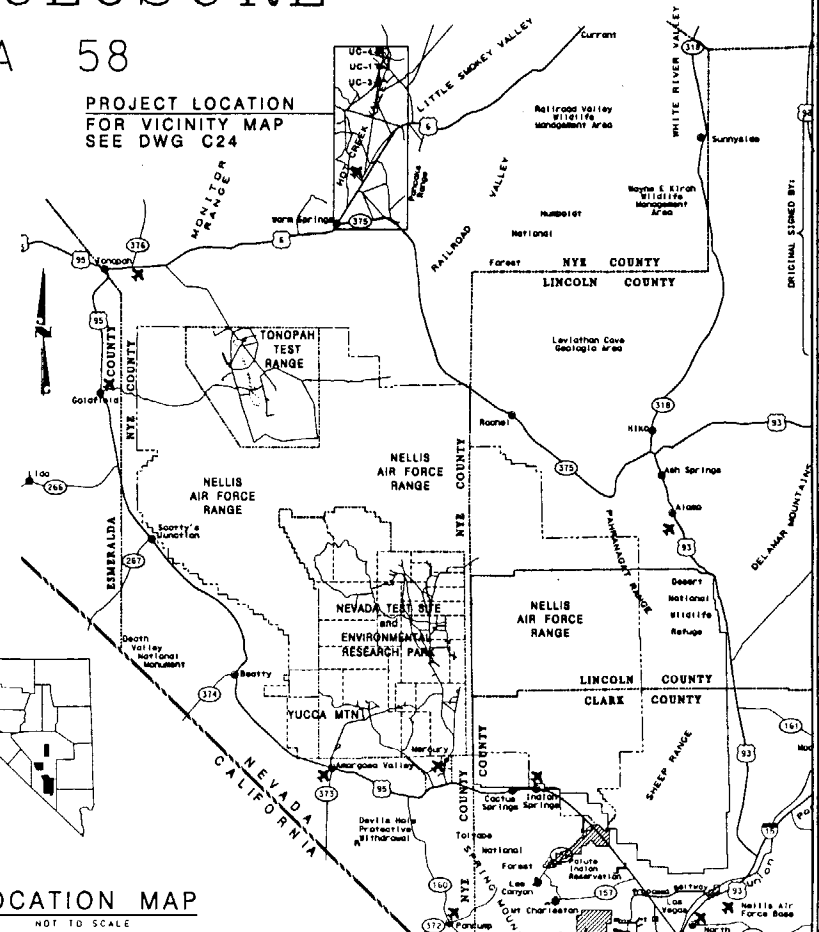
7-10-01 N/A

N/A N/A N/A

N/A N/A

UNLESS NOTED BY MARKED CHANGES, ALL DIMENSIONS, NOTES, REFERENCES AND CONSTRUCTION FEATURES ARE CORRECTED, AND WERE CONSTRUCTED AS SHOWN ON THIS DRAWING.

PROJECT LOCATION
FOR VICINITY MAP
SEE DWG C24



LOCATION MAP

NOT TO SCALE

U.S. DEPARTMENT OF ENERGY
NEVADA OPERATIONS OFFICE
LAS VEGAS, NEVADA

Bechtel Nevada

CENTRAL NEVADA TEST AREA —— AREA 58
CAU 417 CLOSURE

TITLE SHEET

ORIGINAL SIGNED BY:

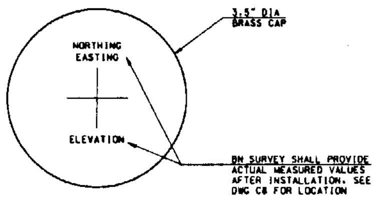
SUBMITTED BECHTEL NEVADA: R. M. SCHECHTER 4/5/00
MICHAEL SHOTTON, DEPT OF ENERGY PROJECT ENGINEER 4/5/00
MONICA SANCHEZ, PROJECT NUMBER 98228A58, ACTIVITY CODE CBCG1388, 4/7/00

SCALE N/A

NO	DATE	REVISION DESCRIPTION
1		AS-BUILT DATED 4/16/01
0		ISSUED FOR CONSTRUCTION 04/05/00

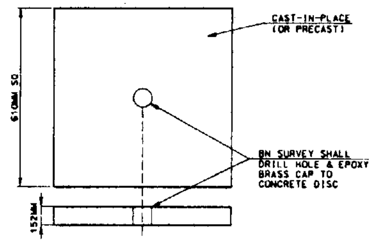
DRAWING NUMBER JS-058-98228-T2 REV 1

07/06/2001 09:42:52 Ahg \Dgn\98228a58\cad_data\uc1\Option B\t2.dgn



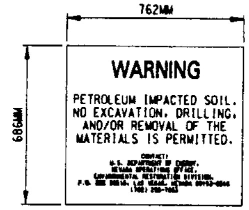
BRASS CAP DETAIL (1) C8

NOT TO SCALE



CONCRETE MONUMENT DETAIL (2) C8

NOT TO SCALE

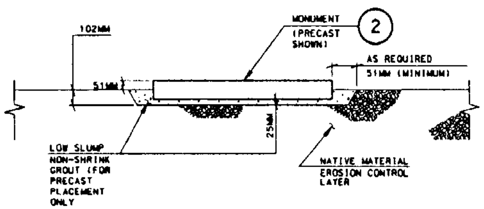


SIGN DETAIL (3) C8

NOT TO SCALE

SIGN NOTES

1. THIS DETAIL APPLIES TO SIGNS ON FENCE ONLY
2. SIGN SHALL BE WHITE WITH BLACK LETTERING.
3. MINIMUM LETTER/WORD HEIGHT SHALL BE:
   DANGER = 76MM
   INFORMATION = 38MM
   CONTACT = 19MM
4. SIGN STOCK THICKNESS SHALL BE 16 GAGE/0.0635 OR GREATER



INSTALLATION DETAIL (4) C8

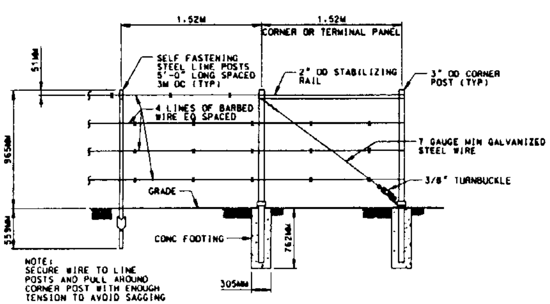
NOT TO SCALE

DETAIL NOTES

1. DETAIL 2 - SHOWS CONTROLLED DIMENSIONS FOR MONUMENT.
2. DETAIL 4 - FORM CAST-IN-PLACE CONCRETE MONUMENT TO THE DIMENSIONS SHOWN.

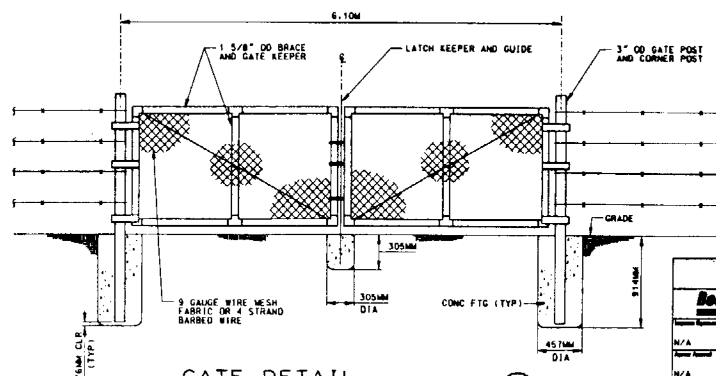
REFERENCES

TITLE SHEET	JS-058-99228-T1
CLOSURE CAP GRADING PLAN & SECTIONS	JS-058-99228-C8



4 WIRE FENCE (5) C8

NOT TO SCALE



GATE DETAIL (6) C8

NOT TO SCALE

AS-BUILT

Bechtel Nevada

N/A	N/A	N/A	
N/A			

UNLESS NOTED BY MARKED CHANGES, ALL DIMENSIONS, NOTES, REFERENCES AND CONSTRUCTION FEATURES ARE CORRECTED, AND WERE CONSTRUCTED AS SHOWN ON THIS DRAWING.

ORIGINAL MYLAR SIGNED BY:

U.S. DEPARTMENT OF ENERGY

NEVADA OPERATIONS OFFICE LAS VEGAS, NEVADA

Bechtel Nevada

CENTRAL NEVADA TEST AREA — AREA 58

CAU 417 REMEDIATION

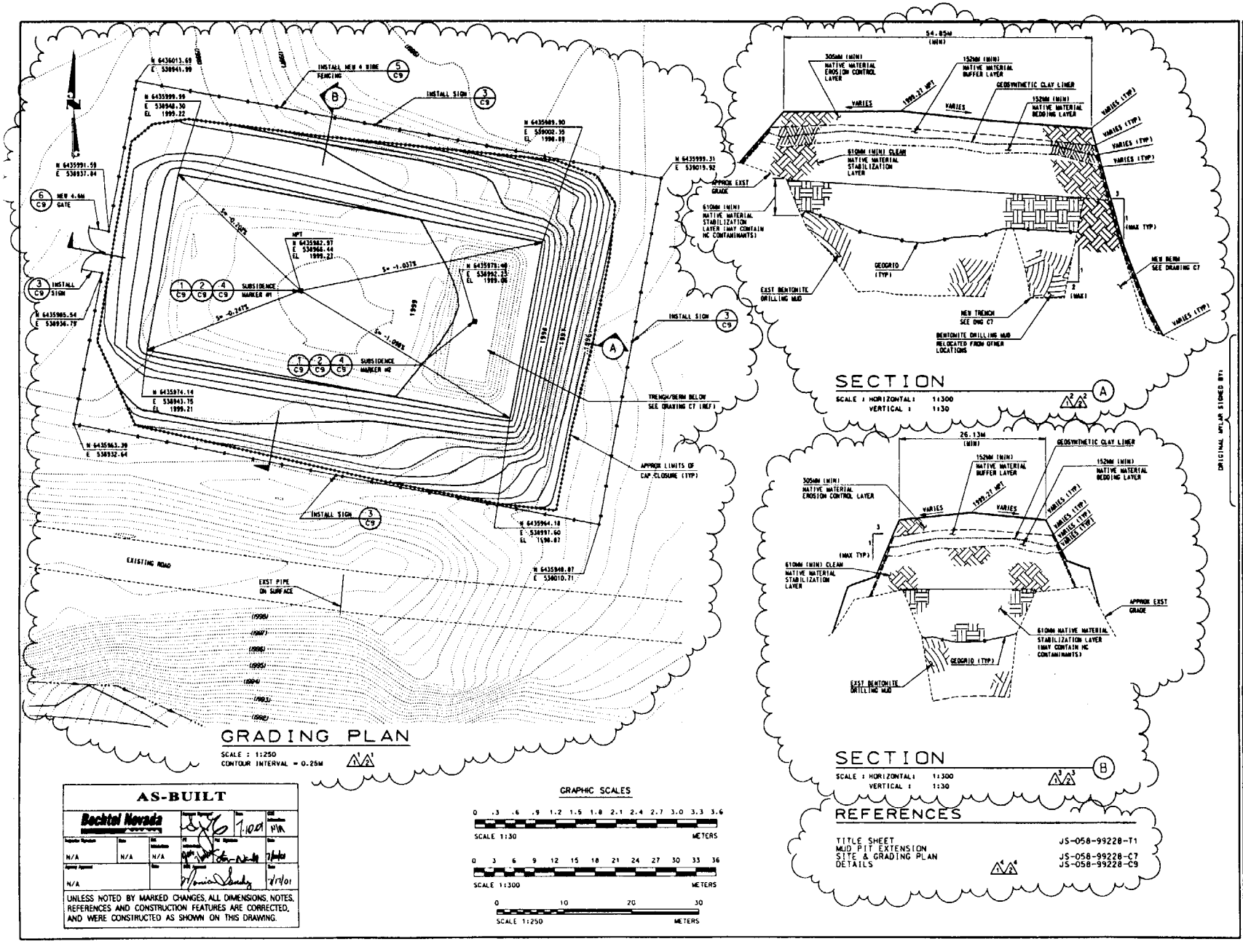
MUD PIT UC4-C CLOSURE

DETAILS

DESIGNED JAS	SUBMITTED BECHTEL NEVADA DCP/E. LANER	7/27/99	
DRAWN NDJ			
CHECKED ES/JAS	MICHAEL SHOTTON, DEPT OF ENERGY PROJECT ENGINEER	7/29/99	
N/A	MICHAEL D. GIBLIN	7/30/99	
N/A	PROJECT NUMBER 98228A58	N/A	ACTIVITY CODE C8W01H04

REV	DESCRIPTION
2	FINAL AS-BUILT DATED 4/16/01
1	AS-BUILT DATED 11/8/99
0	ISSUED FOR CONSTRUCTION 07/30/99

JS-058-99228-C9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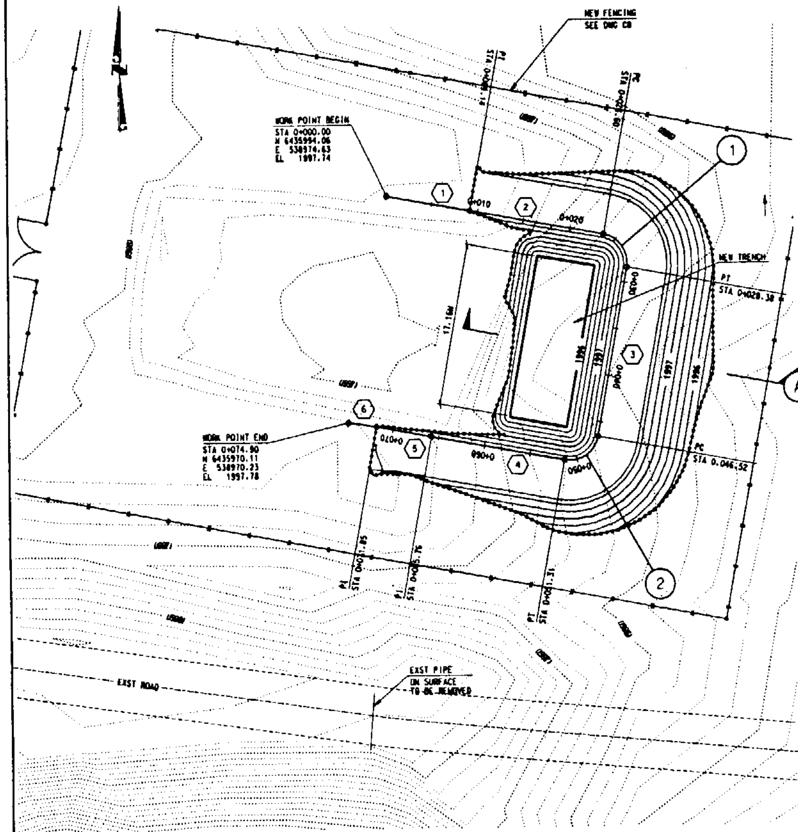
SCALE : 1:250
CONTOUR INTERVAL = 0.25M
SECTION
SCALE : HORIZONTAL: 1:300
VERTICAL : 1:30
SECTION
SCALE : HORIZONTAL: 1:300
VERTICAL : 1:30
REFERENCES
TITLE SHEET JS-058-99228-T1
MUD PIT EXTENSION SITE & GRADING PLAN JS-058-99228-C7
DETAILS JS-058-99228-C9
GRAPHIC SCALES
SCALE 1:250 METERS
SCALE 1:300 METERS
SCALE 1:30 METERS
AS-BUILT
Bechtel Nevada
UNLESS NOTED BY MARKED CHANGES, ALL DIMENSIONS, NOTES, REFERENCES AND CONSTRUCTION FEATURES ARE CORRECTED, AND WERE CONSTRUCTED AS SHOWN ON THIS DRAWING.
CENTRAL NEVADA TEST AREA — AREA 5B
CAU 417 REMEDIATION
MUD PIT UC4-C CLOSURE
CLOSURE CAP
GRADING PLAN & SECTIONS
U.S. DEPARTMENT OF ENERGY
Bechtel Nevada
JS-058-99228-C8



SITE & GRADING PLAN

SCALE : 1:250
CONTOUR INTERVAL = 0.25M

LINE SEGMENT DATA		
ELEMENT ID	BEARING	DISTANCE
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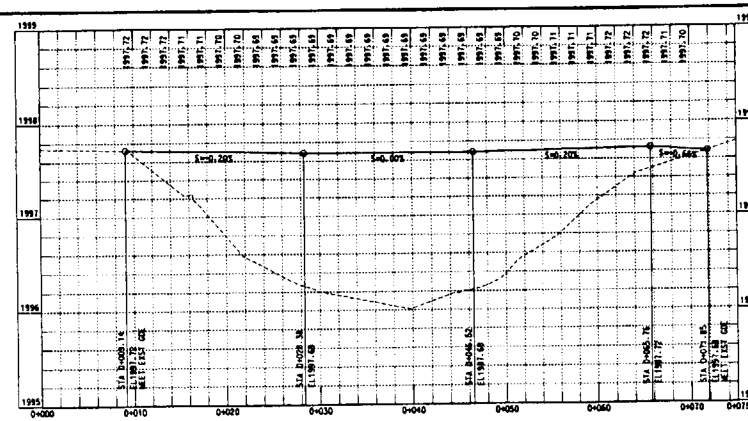
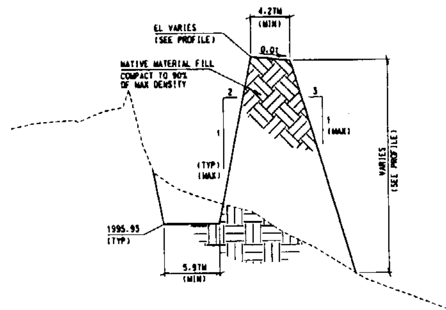
2	S79°35'54"E	14.45M
3	S10°24'03"W	18.13M
4	S79°35'55"W	14.45M
5	S79°35'55"E	6.10M
6	S81°49'52"W	3.00M

CURVE DATA				
CURVE ID	DELTA	RADIUS	LENGTH	TANGENT
1	89°59'58"	3.05M	4.79M	3.05M
2	90°00'01"	3.05M	4.79M	3.05M



PROFILE

SCALE : HORIZONTAL: 1:250, VERTICAL : 1:25



SECTION

SCALE : HORIZONTAL: 1:250
VERTICAL : 1:25

REFERENCES

TITLE SHEET	JS-058-99228-T1
CLOSURE CAP	
GRADING PLAN & SECTIONS	JS-058-99228-C8

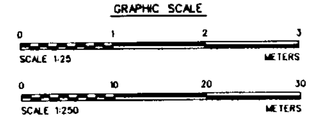
AS-BUILT

Bechtel Nevada

N/A N/A N/A 7.18.01 7/18/01 7/17/01

UNLESS NOTED BY MARKED CHANGES, ALL DIMENSIONS, NOTES, REFERENCES AND CONSTRUCTION FEATURES ARE CORRECTED, AND WERE CONSTRUCTED AS SHOWN ON THIS DRAWING.

GRAPHIC SCALE



ORIGINAL MYLAR SIGNED BY:

NO	DATE	REVISION DESCRIPTION
2		FINAL AS-BUILT DATED 4/16/01
1		AS-BUILT DATED 11/8/99
0		ISSUED FOR CONSTRUCTION 07/30/99

DESIGNED JAS — DRAWN MDJ — CHECKED ES/JAS — SWIR N/A — MAP REF NO. N/A

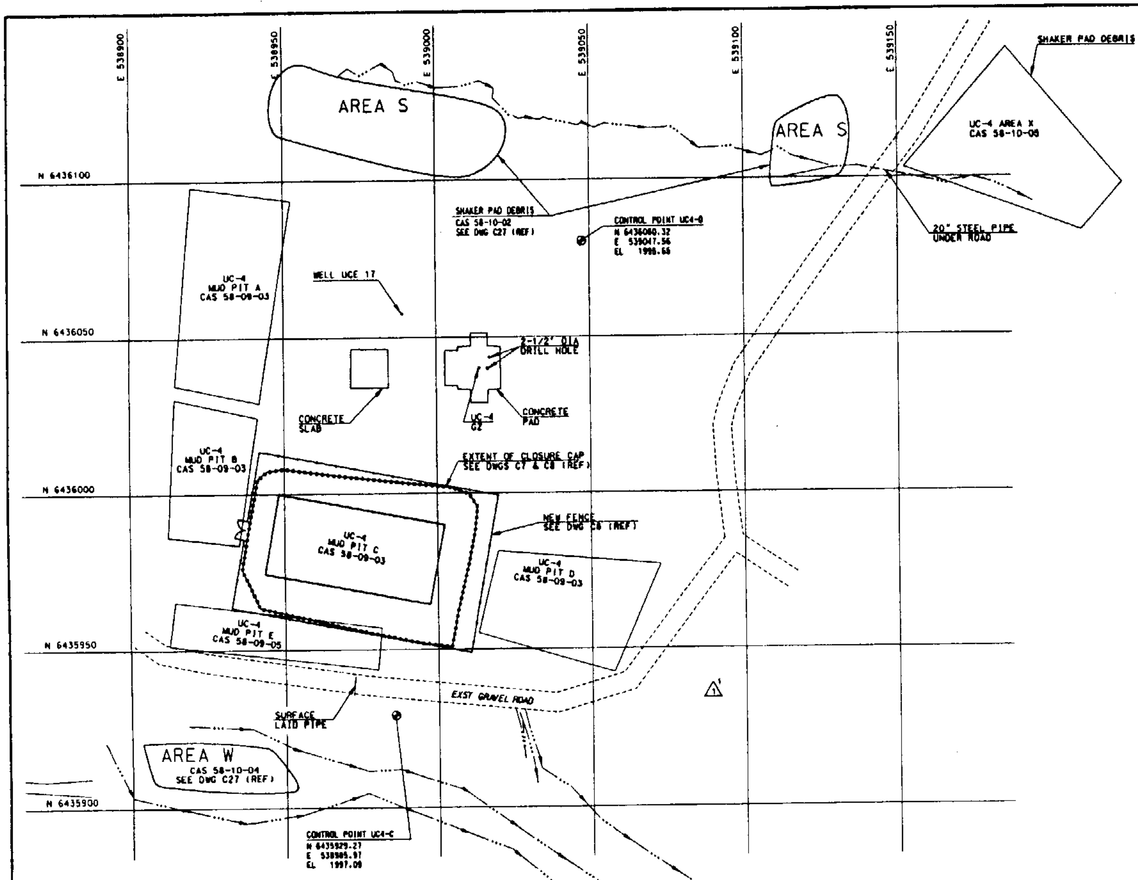
SUBMITTED BECHTEL NEVADA: DCP/L. LANER 7/27/99
DEPT OF ENERGY PROJECT ENGINEER: MICHAEL SHOTTON 7/29/99
MICHAEL O. GIBLIN 7/30/99
PROJECT NUMBER 39228A58 — PROJECT WORK NO. N/A — ACTIVITY CODE C8WD1HD4

U.S. DEPARTMENT OF ENERGY
NEVADA OPERATIONS OFFICE
LAS VEGAS, NEVADA

Bechtel Nevada

CENTRAL NEVADA TEST AREA — AREA 58
CAU 417 REMEDIATION
MUD PIT UC4-C CLOSURE
MUD PIT EXTENSION
SITE & GRADING PLAN

DRAWING NUMBER JS-058-98228-C7
SHEET OF REV 1



SITE PLAN

SCALE : 1:750

PROJECT NOTES

1. NATIVE MATERIAL BORROW SOURCE FOR ALL LAYERS WERE LOCATED AT UC-1, WEST OF UC1-CMP. SEE DWG C5.
2. SOURCE OF CONSTRUCTION WATER WAS WELL HTH-2, LOCATED AT UC1, SOUTH OF UC1-CMP. SEE VICINITY MAP, DRAWING C1.
3. STABILIZATION, BEDDING, AND BUFFER LAYERS MEET THE REQUIREMENTS OF SPECIFICATION SECTION 02223.
4. MATERIAL FOR NEW BERM MEETS THE REQUIREMENTS OF SPECIFICATION SECTION 02223.
5. MATERIAL FOR THE EROSION CONTROL LAYER MEETS THE REQUIREMENTS OF SPECIFICATION SECTION 02611.
6. GEOGRID MEETS THE REQUIREMENTS OF SPECIFICATION SECTION 07537.
7. GEOSYNTHETIC CLAY LINER (GCL) MEETS THE REQUIREMENTS OF SPECIFICATION SECTION 07538.
8. DURING POST CLOSURE MONITORING ACTIVITIES, THE CAP WAS VISUALLY INSPECTED FOR EROSION DAMAGE AND ANY DAMAGE NOTED WAS REPAIRED.
9. BASIS FOR HORIZONTAL CONTROL IS THE NORTH AMERICAN DATUM OF 1983, STATE PLANE, NEVADA CENTRAL ZONE, METERS.
10. BASIS FOR VERTICAL CONTROL IS THE NORTH AMERICAN VERTICAL DATUM OF 1929, METERS.

REFERENCES

TITLE SHEET	JS-058-98228-T1
VICINITY MAP	JS-058-98228-C1
BORROW SOURCES	JS-058-98228-C5
LOCATION PLAN	
MUD PIT EXTENSION	JS-058-98228-C7
SITE & GRADING PLAN	
CLOSURE CAP	JS-058-98228-C8
GRADING PLAN & SECTIONS	
AREA UC-4	JS-058-98228-C27
CLEAN CLOSURE SITES	

GRAPHIC SCALE

0 30 60 90

SCALE 1:750 METERS

AS-BUILT

Bechtel Nevada

1.10.01 N/A

N/A N/A N/A 7/9/01

N/A 7/17/01

UNLESS NOTED BY MARKED CHANGES, ALL DIMENSIONS, NOTES, REFERENCES AND CONSTRUCTION FEATURES ARE CORRECTED, AND WERE CONSTRUCTED AS SHOWN ON THIS DRAWING.

NO	DATE	REVISION DESCRIPTION
0		ISSUED FOR CONSTRUCTION 07/30/99
1		AS-BUILT DATED 11/8/99
2		REVISED & REDRAWN AS-BUILT DATED 4/16/01

ORIGINAL MYLAR SIGNED BY:

DESIGNED JAS	DRAWN NDJ	CHECKED ES/JAS	N/A
DCP/E. LANER	7/21/99		
MICHAEL SHOTTON	7/29/99		
MICHAEL D. GIBLIN	7/30/99		
PROJECT NUMBER 98228A58	N/A	CBMD1HO4	

N/A

CENTRAL NEVADA TEST AREA ——— AREA 58

CAU 417 REMEDIATION

MUD PIT UC4-C CLOSURE

SITE PLAN

U.S. DEPARTMENT OF ENERGY

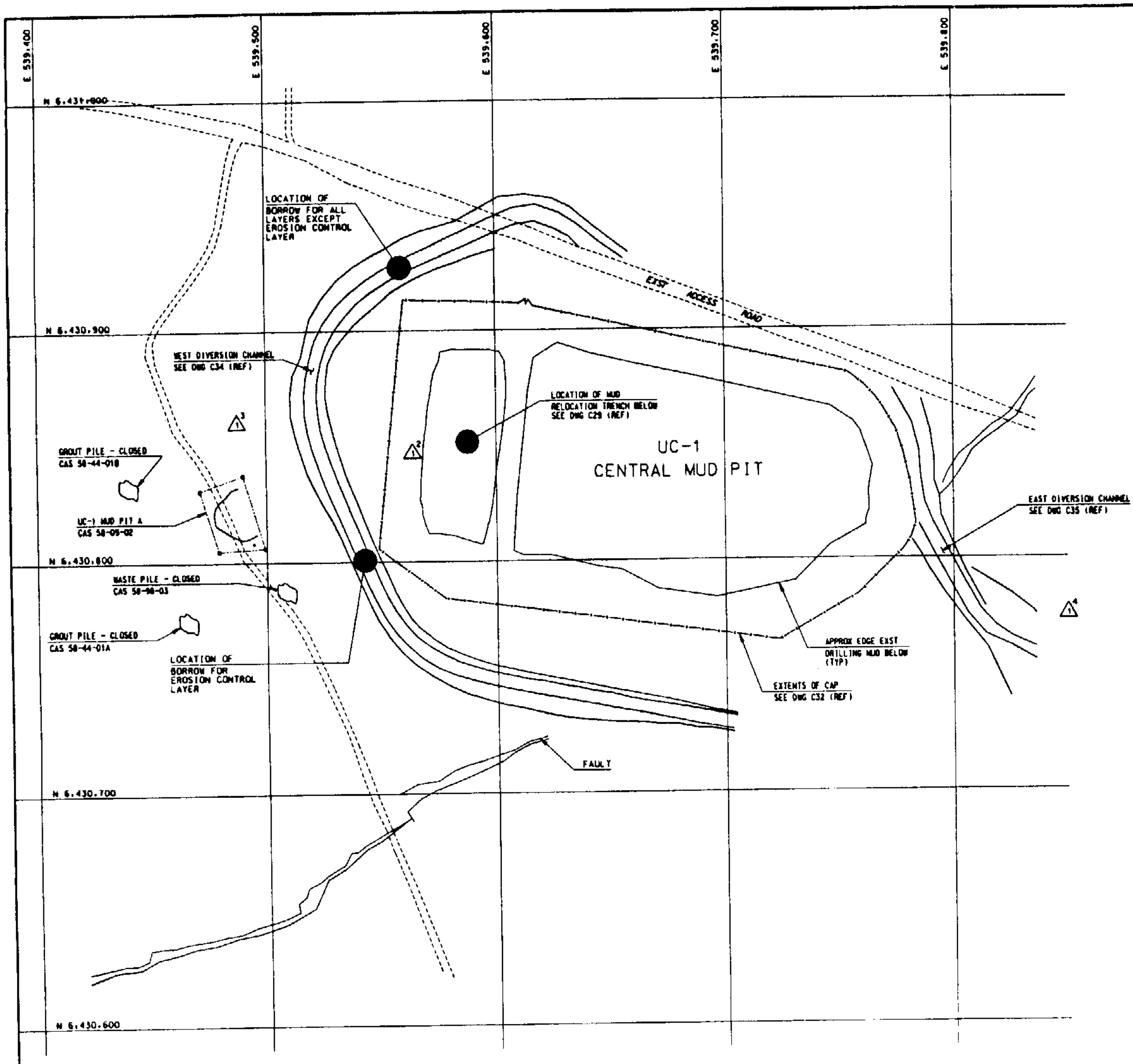
NEVADA OPERATIONS OFFICE

LAS VEGAS, NEVADA

Bechtel Nevada

JS-058-98228-C6

REV 1



LOCATION PLAN

SCALE : 1:1000

NOTE

1. ALL LOCATIONS SHOWN WERE USED AS BORROW SOURCES FOR BOTH THE UC4 MUD PIT C AND UC1 CENTRAL MUD PIT CLOSURE COVERS.

REFERENCES

TITLE SHEET	JS-058-98228-T1
MUD PIT EXTENSION GRADING PLAN & SECTIONS	JS-058-98228-C29
CLOSURE CAP SITE & GRADING PLAN	JS-058-98228-C32
WEST DIVERSION CHANNEL PLAN & PROFILE	JS-058-98228-C34
EAST DIVERSION CHANNEL GRADING PLAN	JS-058-98228-C35

AS-BUILT

Bechtel Nevada

N/A	N/A	N/A	[signature]	7/9/01
N/A		N/A	[signature]	7/17/01

UNLESS NOTED BY MARKED CHANGES, ALL DIMENSIONS, NOTES, REFERENCES AND CONSTRUCTION FEATURES ARE CORRECTED, AND WERE CONSTRUCTED AS SHOWN ON THIS DRAWING.

GRAPHIC SCALE

0 20 40 60 80 100 120

SCALE 1:1000 METERS

ORIGINAL MYLAR SIGNED BY:

U.S. DEPARTMENT OF ENERGY
NEVADA OPERATIONS OFFICE
LAS VEGAS, NEVADA

Bechtel Nevada

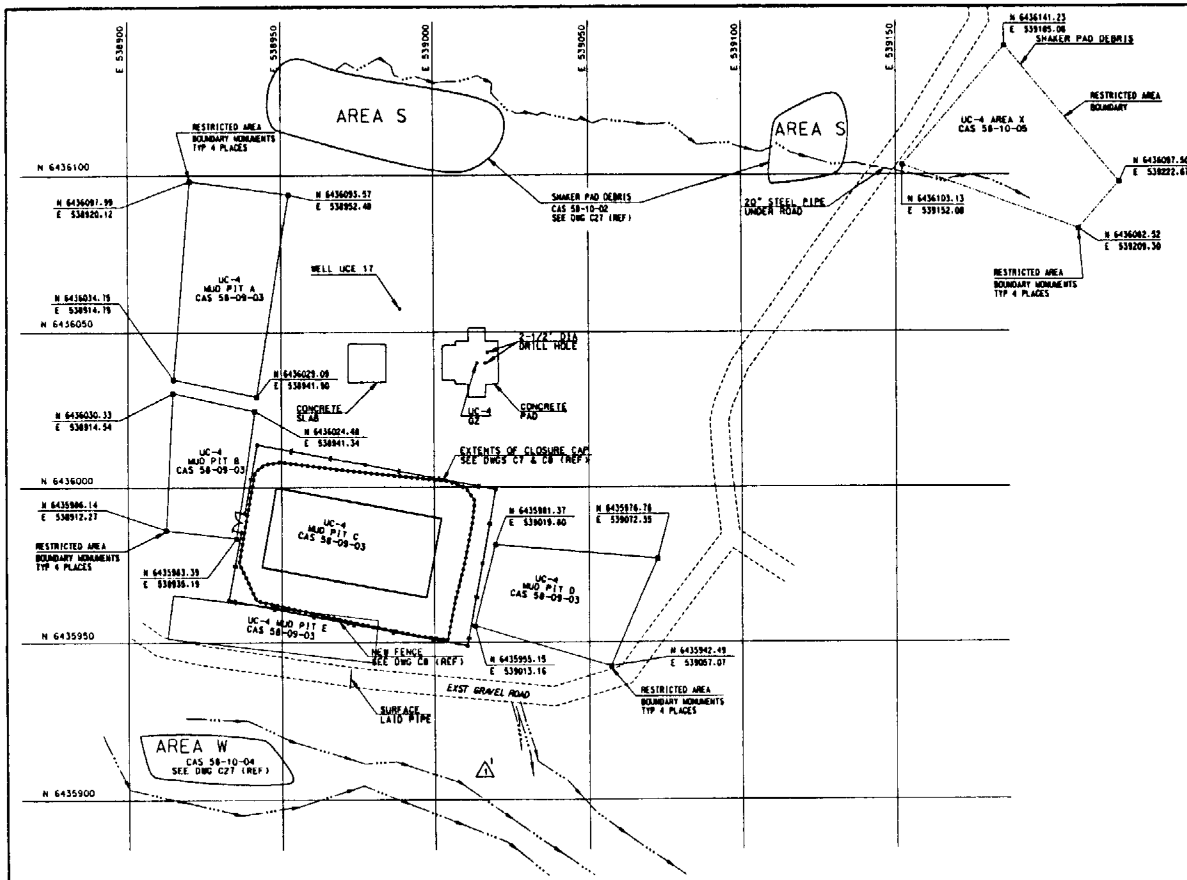
CENTRAL NEVADA TEST AREA — AREA 58
CAU 417 REMEDIATION
MUD PIT UC4-C CLOSURE
BORROW SOURCES
LOCATION PLAN

DESIGNED JAS	SUBMITTED DCP/E. LANER	7/27/99	
DRAWN NDJ			
CHECKED ES/JAS	MICHAEL SHOTTON	7/28/99	
N/A	MICHAEL D. GIBLIN	7/30/99	
N/A	98228A58	N/A	C8N01H04

REV	DESCRIPTION
2	REVISED AND REDRAWN AS-BUILT 4/16/01
1	CURRENT STATUS 11/8/99
0	ISSUED FOR CONSTRUCTION 07/30/99

JS-058-98228-C5

REV 2



RESTRICTED AREA BOUNDARIES

SCALE 1:750

GENERAL NOTES

1. BOUNDARY MONUMENTS ARE PEDESTAL MONUMENTS WITH BRASS CAP AND STAMPED BY SURVEY.
2. EACH MONUMENT HAS A POSTED SIGN THAT READS AS FOLLOWS:

   WARNING: PETROLEUM IMPACTED SOIL. NO EXCAVATION, DRILLING AND/OR REMOVAL OF THE MATERIALS IS PERMITTED WITHOUT U.S. GOVERNMENT PERMISSION.
   CONTACT:
   U.S. DEPARTMENT OF ENERGY, NEVADA OPERATIONS OFFICE, ENVIRONMENTAL RESTORATION DIVISION, P.O. BOX 98518, LAS VEGAS NEVADA 89193-8518 (702) 295-7063.
3. BASIS OF HORIZONTAL CONTROL IS THE NORTH AMERICAN DATUM (NAD) OF 1983, STATE PLANE, NEVADA CENTRAL ZONE, METERS.

REFERENCES

TITLE SHEET	JS-058-98228-T1
MUD PIT EXTENSION SITE & GRADING PLAN	JS-058-98228-C7
CLOSURE CAP GRADING PLAN & SECTIONS	JS-058-98228-C8
AREA UC-4 CLEAN CLOSURE SITES	JS-058-98228-C27

AS-BUILT

Bechtel Nevada

N/A N/A N/A 7/10/01 7/12/01

UNLESS NOTED BY MARKED CHANGES, ALL DIMENSIONS, NOTES, REFERENCES AND CONSTRUCTION FEATURES ARE CORRECTED, AND WERE CONSTRUCTED AS SHOWN ON THIS DRAWING.

GRAPHIC SCALE

0 30 60 90

SCALE 1:750 METERS

ORIGINAL MYLAR SIGNED BY:

DESIGNED JAS	DCP/E. LANER	7/27/99
DRAWN NDJ		
CHECKED ES/JAS	MICHAEL SHOTTON	7/29/99
N/A	MICHAEL D. GIBLIN	7/30/99
N/A	98228A58 N/A	CBW01404

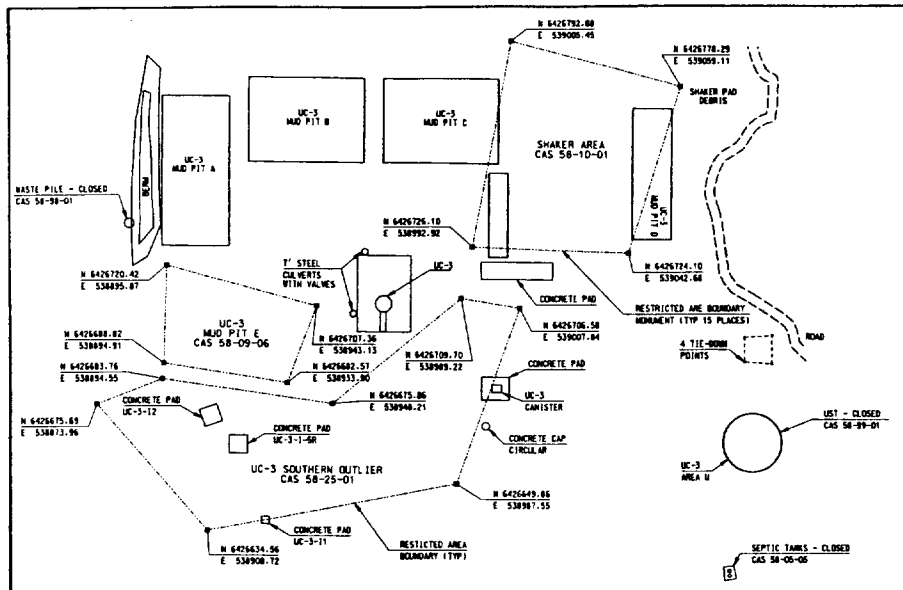
NO	REVISION DESCRIPTION
2	REVISED AND REDRAWN AS-BUILT DATED 4/16/01
1	CURRENT STATUS DATED 11/8/99
0	ISSUED FOR CONSTRUCTION 07/30/99

U.S. DEPARTMENT OF ENERGY
NEVADA OPERATIONS OFFICE
LAS VEGAS, NEVADA

Bechtel Nevada

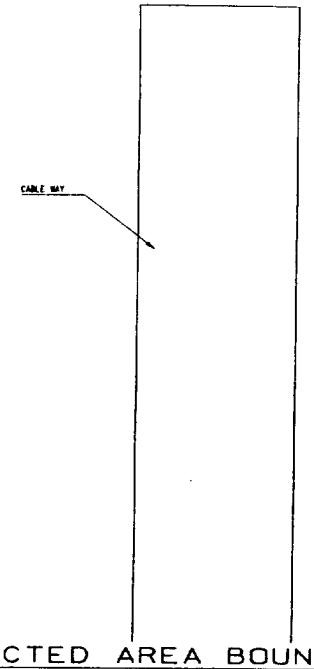
CENTRAL NEVADA TEST AREA — AREA 58
CAU 417 REMEDIATION
MUD PIT UC4-C CLOSURE
AREA UC4-C
RESTRICTED AREA BOUNDARIES

JS-058-98228-C4 REV 2



REFERENCES

TITLE SHEET AREA UC-3 CLEAN CLOSURE SITES	JS-058-98228-T1
	JS-058-98228-C26



UC-3 AREA Z
CAS 58-44-03
(APPROX AREA)
SEE DRAWING C26 (REF)

GENERAL NOTES

1. BOUNDARY MONUMENTS ARE PEDESTAL MONUMENTS WITH BRASS CAP AND STAMPED BY SURVEY.
2. EACH MONUMENT HAS A POSTED SIGN THAT READS AS FOLLOWS:

   WARNING: PETROLEUM IMPACTED SOIL. NO EXCAVATION, DRILLING AND/OR REMOVAL OF THE MATERIALS IS PERMITTED WITHOUT U.S. GOVERNMENT PERMISSION.
   CONTACT:
   U.S. DEPARTMENT OF ENERGY, NEVADA OPERATIONS OFFICE, ENVIRONMENTAL RESTORATION DIVISION, P.O. BOX 98518, LAS VEGAS NEVADA 89193-8518 (702) 295-7063.
3. BASIS OF HORIZONTAL CONTROL IS THE NORTH AMERICAN DATUM 1983 OF 1983, STATE PLANE, NEVADA CENTRAL ZONE, METERS.
4. ALL WASTE PILES WERE CLOSED. LOCATIONS SHOWN FOR RECORD PURPOSES ONLY.

AS-BUILT

Bechtel Nevada

UNLESS NOTED BY MARKED CHANGES, ALL DIMENSIONS, NOTES, REFERENCES AND CONSTRUCTION FEATURES ARE CORRECTED, AND WERE CONSTRUCTED AS SHOWN ON THIS DRAWING.

N

GRAPHIC SCALE

0 30 60 90

SCALE 1:750 METERS

RESTRICTED AREA BOUNDARIES

SCALE : 1:750

ORIGINAL MYLAR SIGNED BY:

U.S. DEPARTMENT OF ENERGY
NEVADA OPERATIONS OFFICE
LAS VEGAS, NEVADA

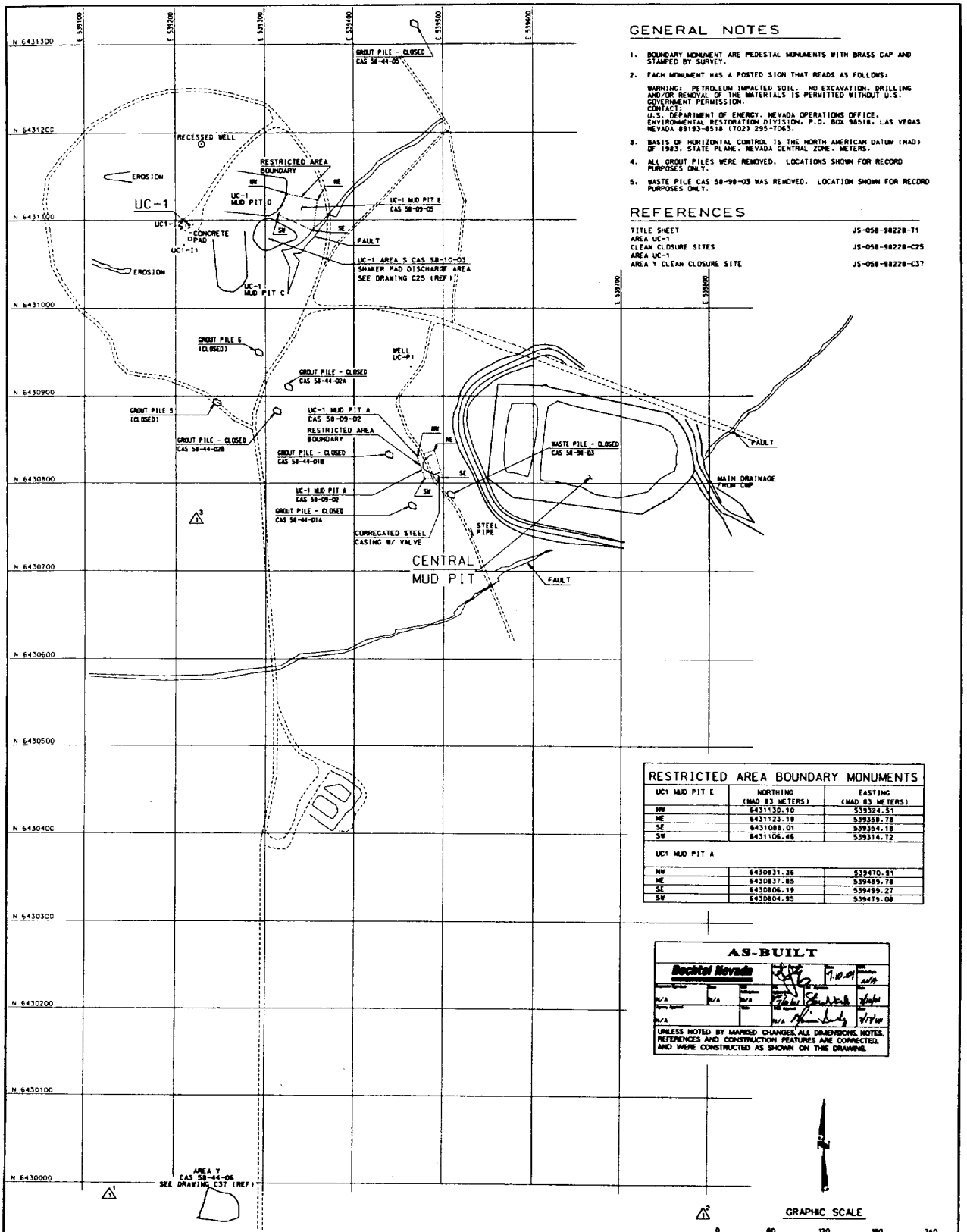
Bechtel Nevada

CENTRAL NEVADA TEST AREA — AREA 58
CAU 417 REMEDIATION
MUD PIT UC4-C CLOSURE
AREA UC-3
RESTRICTED AREA BOUNDARIES

DRAWN	JAS	SUBMITTED BECHTEL NEVADA	DATE
DESIGNED	MDJ	DCP/E. LAMER	7/27/99
CHECKED	ES/JAS	MICHAEL SHOTTON	7/29/99
APPR	N/A	DEPT OF ENERGY PROJECT MANAGER	DATE
MAP REF NO.	N/A	MICHAEL O. GIBLIN	7/30/99
PROJECT NUMBER	98228458	PROJECT TASK NO. N/A	ACTIVITY CODE CB01H04

NO	DATE	REVISION DESCRIPTION
2		REVISED AND REDRAWN AS-BUILT DATED 4/16/99
1		RESCALED AND REDRAWN TO INCORPORATE AREA 2 CURRENT STATUS DATED 11/8/99
0		ISSUED FOR CONSTRUCTION 07/30/99

JS-058-98228-C1



GENERAL NOTES

1. BOUNDARY MONUMENT ARE PEDESTAL MONUMENTS WITH BRASS CAP AND STAMPED BY SURVEY.
2. EACH MONUMENT HAS A POSTED SIGN THAT READS AS FOLLOWS:

   WARNING: PETROLEUM IMPACTED SOIL. NO EXCAVATION, DRILLING AND/OR REMOVAL OF THE MATERIALS IS PERMITTED WITHOUT U.S. GOVERNMENT PERMISSION.
   CONTACT:
   U.S. DEPARTMENT OF ENERGY, NEVADA OPERATIONS OFFICE, ENVIRONMENTAL RESTORATION DIVISION, P.O. BOX 98518, LAS VEGAS NEVADA 89193-8518 (702) 295-7063.
3. BASIS OF HORIZONTAL CONTROL IS THE NORTH AMERICAN DATUM (NAD) OF 1983, STATE PLANE, NEVADA CENTRAL ZONE, METERS.
4. ALL GROUT PILES WERE REMOVED. LOCATIONS SHOWN FOR RECORD PURPOSES ONLY.
5. WASTE PILE CAS 58-98-03 WAS REMOVED. LOCATION SHOWN FOR RECORD PURPOSES ONLY.

REFERENCES

TITLE SHEET	JS-058-98228-T1
AREA UC-1 CLEAN CLOSURE SITES	JS-058-98228-C25
AREA UC-1 AREA Y CLEAN CLOSURE SITE	JS-058-98228-C37

RESTRICTED AREA BOUNDARY MONUMENTS

UC1 MUD PIT E	NORTHING (NAD 83 METERS)	EASTING (NAD 83 METERS)
NW	6431130.10	539324.51
NE	6431123.19	539358.78
SE	6431088.01	539354.18
SW	6431106.46	539314.72
UC1 MUD PIT A		
NW	6430831.36	539470.81
NE	6430837.85	539489.78
SE	6430806.19	539499.27
SW	6430804.95	539479.08

AS-BUILT

Bechtel Nevada

UNLESS NOTED BY MARKED CHANGES ALL DIMENSIONS, NOTES, REFERENCES AND CONSTRUCTION FEATURES ARE CORRECTED, AND WERE CONSTRUCTED AS SHOWN ON THIS DRAWING.

GRAPHIC SCALE
0 60 120 180 240
SCALE 1:2000 METERS

RESTRICTED AREA BOUNDARIES

SCALE 1:2000

ORIGINAL MYLAR SIGNED BY:

U.S. DEPARTMENT OF ENERGY
NEVADA OPERATIONS OFFICE LAS VEGAS, NEVADA
Bechtel Nevada

CENTRAL NEVADA TEST AREA — AREA 58
CAU 417 REMEDIATION
MUD PIT UC4-C CLOSURE
AREA UC-1
RESTRICTED AREA BOUNDARIES

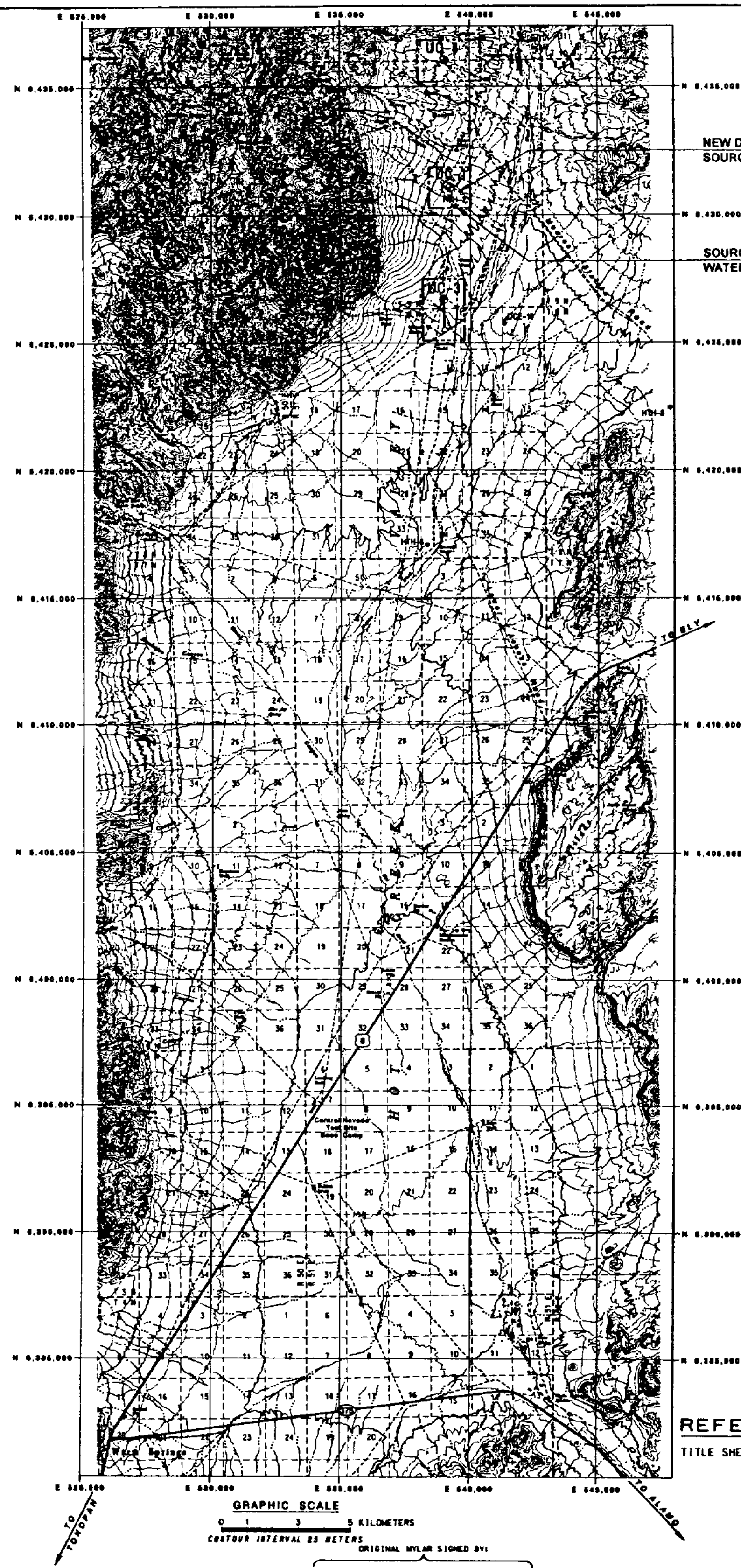
DESIGNED JAS
DRAWN MDJ
CHECKED ES/JAS
TRACED N/A
DWG ELEV NO N/A

DCP/E. LAMER 7/27/99
MICHAEL SHOTTON 7/29/99
DEPT OF ENERGY PROJECT ENGINEER
MITCHELL D. GIBLIN 7/30/99

PROJECT NUMBER 98228A58 | PROJECT AUTH NO N/A | ACTIVITY CODE CA9011H04

NO	DATE	REVISION DESCRIPTION	BY
2	7/10/01	REVISED AND REDRAWN AS-BUILT DATED 4/16/01	JAS
1	7/29/99	RESCALED AND REDRAWN TO CORRECT LOCATION OF AREA Y. CURRENT STATUS DATED 11/8/99	BF/JAS
0	7/30/99	ISSUED FOR CONSTRUCTION 07/30/99	KMS

DOE/NV--98228--58



AS-BUILT

Bechtel Nevada

UNLESS NOTED BY MARKED CHANGES, ALL DIMENSIONS, NOTES, REFERENCES AND CONSTRUCTION FEATURES ARE CORRECTED, AND WERE CONSTRUCTED AS SHOWN ON THIS DRAWING.

REFERENCES

TITLE SHEET JS-058-99228-T1

ORIGINAL MYLAR SIGNED BY:

U.S. DEPARTMENT OF ENERGY NEVADA OPERATIONS OFFICE LAS VEGAS, NEVADA Bechtel Nevada	CENTRAL NEVADA TEST AREA — AREA 58 CAU 417 REMEDIATION MUD PIT UC4-C CLOSURE VICINITY MAP	DESIGNED JAS DRAWN NDJ CHECKED ES/JAS N/A MAP REF NO. N/A

	Date
DCP/E. LANER	7/27/99
MICHAEL SHOTTON	7/29/99
MICHAEL O. GIBLIN	7/30/99
PROJECT NUMBER 98228A58 / PROJECT AUTH NO N/A / ACTIVITY CODE C8WO1HO4	

NO	DATE	REVISION DESCRIPTION
2		FINAL AS-BUILT DATED 4/16/01
1		AS-BUILT DATED 11/17/99
0		ISSUED FOR CONSTRUCTION 07/30/99

JS-058-99228-C1

UNITED STATES DEPARTMENT OF ENERGY

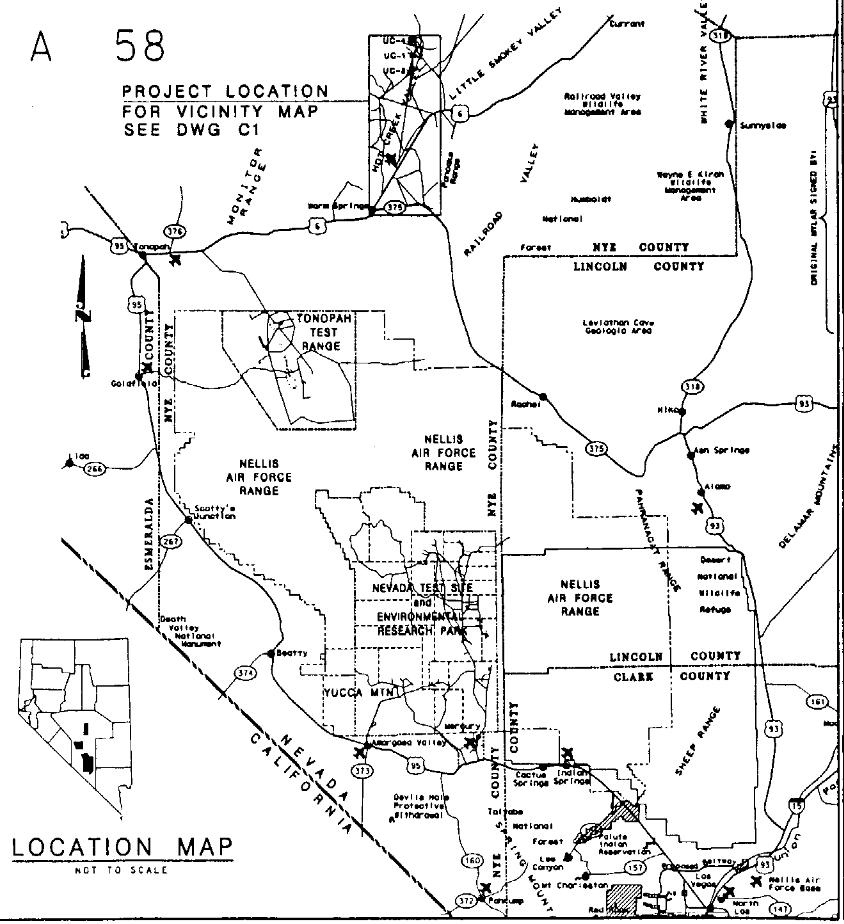
NEVADA OPERATIONS OFFICE

LAS VEGAS, NEVADA

CENTRAL NEVADA TEST AREA (CNTA)
CAU 417 REMEDIATION - UC4-C CLOSURE

AREA 58

PROJECT LOCATION
FOR VICINITY MAP
SEE DWG C1



INDEX

DRAWING NUMBER		DRAWING TITLE
TITLE		
JS-058-98228-T1	REV 2	TITLE SHEET
CIVIL		
JS-058-98228-C1	REV 1	VICINITY MAP
JS-058-98228-C2	REV 2	AREA UC-1 RESTRICTED AREA BOUNDARIES
JS-058-98228-C3	REV 2	AREA UC-3 RESTRICTED AREA BOUNDARIES
JS-058-98228-C4	REV 2	AREA UC-4 RESTRICTED AREA BOUNDARIES
JS-058-98228-C5	REV 2	BORROW SOURCES LOCATION PLAN
JS-058-98228-C6	REV 1	SITE PLAN
JS-058-98228-C7	REV 1	MUD PIT EXTENSION SITE & GRADING PLAN
JS-058-98228-C8	REV 1	CLOSURE CAP GRADING PLAN & SECTIONS
JS-058-98228-C9	REV 1	DETAILS

SCOPE OF WORK

THE SCOPE OF WORK FOR THIS PROJECT INCLUDED THE CONSTRUCTION OF AN ENGINEERED CLOSURE CAP AT THE UC4 MUD PIT C LOCATED IN CENTRAL NEVADA. CONSTRUCTION ALSO INCLUDED INSTALLATION OF GEOGRID AND A GEOSYNTHETIC CLAY LINER. THIS PROJECT ALSO INCLUDED THE CONSTRUCTION OF AN EXTENSION TO THE EXISTING MUD PIT.

PROJECT NOTES

ALL CONSTRUCTION DOCUMENTATION, SPECIAL FEATURES, MATERIALS, TESTS AND DETAILS SHALL CONFORM TO THE "CONSTRUCTION SPECIFICATIONS FOR CAU 417 REMEDIATION, UC4-C CLOSURE CAP" AND THE "CORRECTIVE ACTION UNIT 417 CENTRAL NEVADA TEST AREA SURFACE, NEVADA SAMPLING, INSPECTION, TESTING, AND ACCEPTANCE (SITA) PLAN."

AS-BUILT

Bechtel Nevada

N/A | N/A | N/A

UNLESS NOTED BY MARKED CHANGES, ALL DIMENSIONS, NOTES, REFERENCES AND CONSTRUCTION FEATURES ARE CORRECTED, AND WERE CONSTRUCTED AS SHOWN ON THIS DRAWING.

REV	DATE	REVISION DESCRIPTION
2		AS-BUILT DATED 4/16/01
1		REVISED DRAWING INDEX; CURRENT STATUS DATED 11/8/99
0		ISSUED FOR CONSTRUCTION 07/30/99

DESIGNED JAS | DRAWN NDJ | CHECKED ES/JAS | SCALE N/A

DCP/E. LANER 7/27/99

MICHAEL SHOTTON 7/29/99

MICHAEL D. GIBLIN 7/30/99

98228A58 | N/A | CBWD1HO4

ORIGINAL MYLAR SIGNED BY:

N/A

CENTRAL NEVADA TEST AREA —— AREA 58

CAU 417 REMEDIATION

MUD PIT UC4-C CLOSURE

TITLE SHEET

U.S. DEPARTMENT OF ENERGY

Bechtel Nevada

JS-058-98228-T1 | REV 2

APPENDIX D

SECTORED HOUSEKEEPING SITE CLOSURE VERIFICATION DOCUMENTATION

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Sectored Housekeeping Site Closure Verification Form

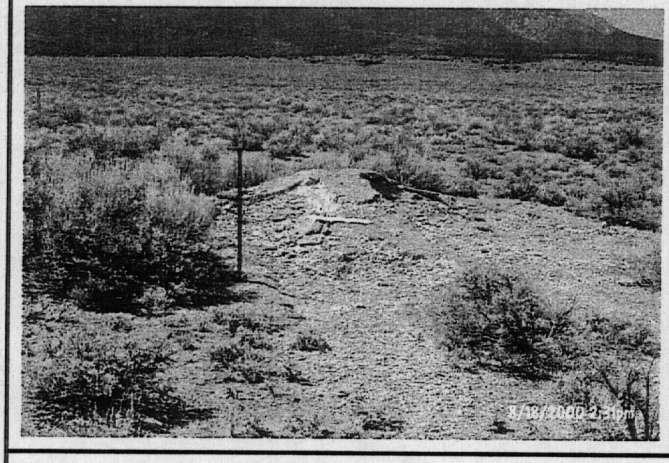
Closure Verification Date: 08/23/00
CAS Number (if applicable): 58-44-01 (North grout pile)
CAU Number (if applicable): 417
Sector Designation: CNTA
Housekeeping Site General Location: Central Nevada Test Site, UC-1
Elevation: 1842.060 m
Northing: 4,276,019.92 m (UTM Zone 11) **Latitude:** 38 37 54.7200
Easting: 568,520.36 m (UTM Zone 11) **Longitude:** 116 12 49.2203

Coordinate/Elevation Data Obtained from: North American Datum, 1927.

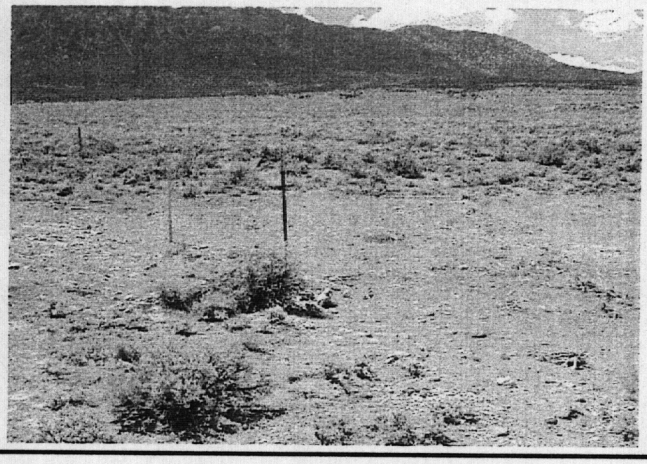
Site Access Route: From Tonopah, proceed northeast on Highway 6 for approximately 80 miles to Moores Station road. Take a left onto Moores Station road and follow for approximately 14 miles northwest to a four way dirt intersection. Proceed west through the intersection for approximately 1.5 miles to the UC-1 site. CAS 58-44-01A is located approximately 60 feet northwest of Mud Pit A. (Mud Pit A, CAS 58-09-02, is marked by four above-grade concrete monuments and is approximately 60 feet west of the UC-1 CMP cover fence line.

Waste Item(s) Originally at Site	Apparent Waste Type*
Grout pile (north pile)	Ordinary

* Ordinary, Scrap Metal, Asbestos, PCB, Salvageable, Hazardous, Radioactive, Mixed, Unknown, Other



Housekeeping Site (north pile) Prior to Clean Up (taken 08/18/2000)



Housekeeping Site After Clean Up (taken 06/07/2001)

Current Site Description/Observations: This CAS was first identified by the IT Off-sites group in a site survey performed on February 13, 1996. The north pile was a small pile of grout measuring approximately 8 feet in diameter and 3.5 feet in height. The grout pile was removed on 23 August 2000, using a front-end loader. The material was used in the construction of the UC-1 Central Mud Pit cover (CAS 58-09-01). The current condition of the former location of the north pile is clear of all waste material.

X **No Further Action Required at Housekeeping Site**

Kevin B. Campbell	Kevin B. Campbell	07/16/2001
Corrective Action Coordinator/Designee	**Signature**	**Date**

Sectored Housekeeping Site Closure Verification Form

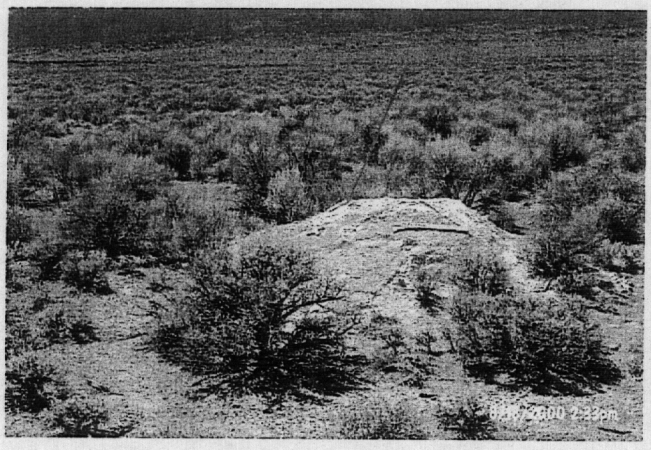
Closure Verification Date: 08/23/00
CAS Number (if applicable): 58-44-01 (South grout pile)
CAU Number (if applicable): 417
Sector Designation: CNTA
Housekeeping Site General Location: Central Nevada Test Site, UC-1
Elevation: 1840.760 m
Northing: 4,275,961.52 m (UTM Zone 11) **Latitude:** 38 37 52.8182
Easting: 568,546.48 m (UTM Zone 11) **Longitude:** 116 12 48.1608

Coordinate/Elevation Data Obtained from: North American Datum, 1927.

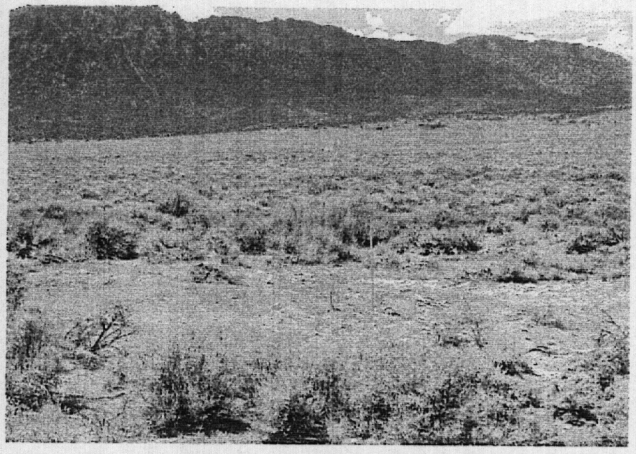
Site Access Route: From Tonopah, proceed northeast on Highway 6 for approximately 80 miles to Moores Station road. Take a left onto Moores Station road and follow for approximately 14 miles northwest to a four way dirt intersection. Proceed west through the intersection for approximately 1.5 miles to the UC-1 site. The south pile of CAS 58-44-01 is located approximately 35 feet west of Mud Pit A. (Mud Pit A, CAS 58-09-02, is marked by four above-grade concrete monuments approximately 60 feet west of the UC-1 CMP cover fence line.)

Waste Item(s) Originally at Site	Apparent Waste Type*
Grout pile (south pile)	Ordinary

* Ordinary, Scrap Metal, Asbestos, PCB, Salvageable, Hazardous, Radioactive, Mixed, Unknown, Other



Housekeeping Site (south pile) Prior to Clean Up (taken 08/18/2000)



Housekeeping Site After Clean Up (taken 06/07/2001)

Current Site Description/Observations: This CAS was first identified by the IT Off-sites group in a site survey performed on February 13, 1996. The south grout pile measured approximately 8 feet in diameter and 3.5 feet high. The grout pile was removed on August 23, 2000 using a front-end loader and was used in the construction of the UC-1 Central Mud Pit (CAS 58-09-01) cover. The current condition of the former location of the south grout pile is clear of all waste material.

X **No Further Action Required at Housekeeping Site**

Kevin B. Campbell	Kevin B. Campbell	07/16/2001
Corrective Action Coordinator/Designee	**Signature**	**Date**

Sectored Housekeeping Site Closure Verification Form

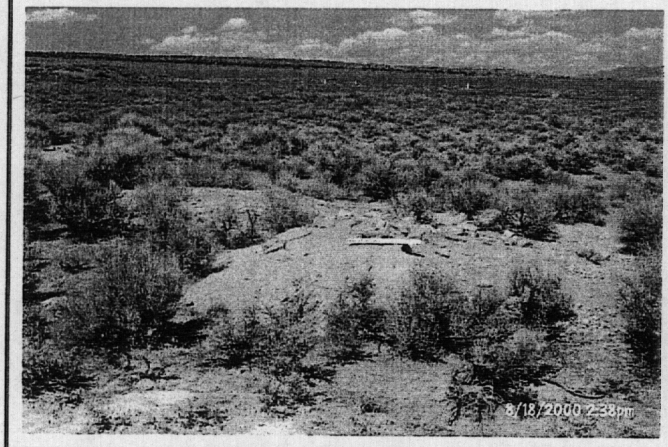
Closure Verification Date: 08/23/00
CAS Number (if applicable): 58-44-02 (North grout pile)
CAU Number (if applicable): 417
Sector Designation: CNTA
Housekeeping Site General Location: Central Nevada Test Site, UC-1
Elevation: 1847.585 m
Northing: 4,276,097.54 m (UTM Zone 11) **Latitude:** 38 37 57.2697
Easting: 568,406.45 m (UTM Zone 11) **Longitude:** 116 12 53.9039

Coordinate/Elevation Data Obtained from: North American Datum, 1927.

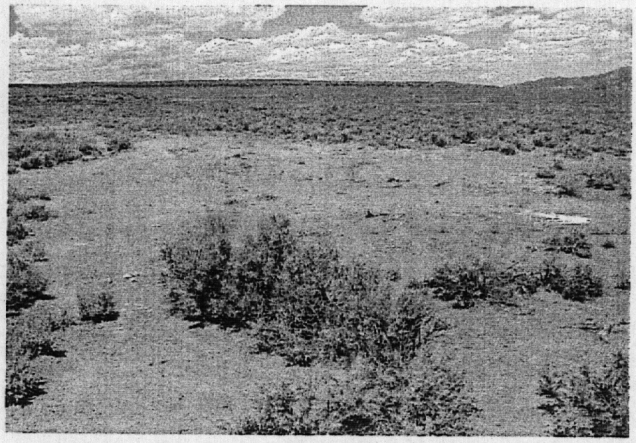
Site Access Route: From Tonopah, NV, drive northeast on Highway 6 for approximately 80 miles to Moores Station road. Follow Moores Station road for approximately 14 miles northwest to a four way dirt intersection. Proceed west through the intersection for approximately 1.5 miles to the UC-1 site. CAS 58-44-02 north, is located approximately 80 ft south of the intersection of the UC-1 access road and the well HTH-2 road and 20 ft east of the well HTH-2 road.

Waste Item(s) Originally at Site	Apparent Waste Type*
Grout pile (north pile)	Ordinary

* Ordinary, Scrap Metal, Asbestos, PCB, Salvageable, Hazardous, Radioactive, Mixed, Unknown, Other



Housekeeping Site Prior to Clean Up
(taken 08/18/2000)



Housekeeping Site After Clean Up
(taken 06/07/2001)

Current Site Description/Observations: This CAS was first identified by the IT Off-sites group in a site survey performed on February 13, 1996. The north pile measured approximately 30 by 10 feet and 3 feet high. The grout pile was removed on August 23, 2000, using a front-end loader and was used in the construction of the UC-1 Central Mud Pit (CAS 58-09-01) cover. The current condition of the former location of the north pile is clear of all waste material.

X **No Further Action Required at Housekeeping Site**

Kevin B. Campbell Kevin B. Campbell 07/16/2001
Corrective Action Coordinator/Designee **Signature** **Date**

Sectored Housekeeping Site Closure Verification Form

Closure Verification Date: 08/23/00
CAS Number (if applicable): 58-44-02 (South grout pile)
CAU Number (if applicable): 417
Sector Designation: CNTA
Housekeeping Site General Location: Central Nevada Test Site, UC-1
Elevation: 1847.674 m
Northing: 4,276,069.72 m (UTM Zone11) **Latitude: 38 37 56.3706**
Easting: 568,394.05 m (UTM Zone11) **Longitude: 116 12 54.4266**

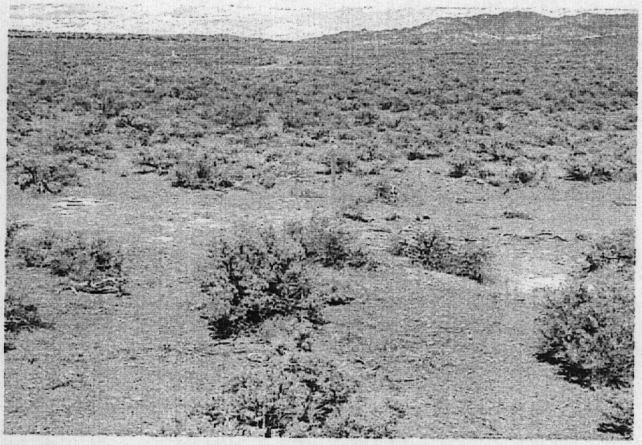
Coordinate/Elevation Data Obtained from: North American Datum, 1927.

Site Access Route: From Tonopah, NV, drive northeast on Highway 6 for approximately 80 miles to Moores Station road. Follow Moores Station road for approximately 14 miles northwest to a four way dirt intersection. Proceed west through the intersection for approximately 1.5 miles to the UC-1 site. The south pile is located approximately 150 feet south of the intersection of the UC-1 access road and the well HTH-2 road, 20 feet east of the well HTH-2 road (approx. 70 feet southwest of the north pile).

Waste Item(s) Originally at Site	Apparent Waste Type*
Grout pile	Ordinary

* Ordinary, Scrap Metal, Asbestos, PCB, Salvageable, Hazardous, Radioactive, Mixed, Unknown, Other

Housekeeping Site Prior to Clean Up
(taken 08/18/2000)



Housekeeping Site After Clean Up
(taken 06/07/2001)

Current Site Description/Observations: This CAS was first identified by the IT Off-sites group in a site survey performed on February 13, 1996. The south grout pile measured approximately 12 by 10 feet and 3 feet high. The grout pile was removed on August 23, 2000 using a front-end loader and was used in the construction of the UC-1 Central Mud Pit (58-09-01) cover. The current condition of the former location of the south grout pile is clean of all waste material.

_X_ No Further Action Required at Housekeeping Site

Kevin B. Campbell	Kevin B. Campbell	07/16/2001
Corrective Action Coordinator/Designee	**Signature**	**Date**

Sectored Housekeeping Site Closure Verification Form

Closure Verification Date: 08/23/00
CAS Number (if applicable): 58-44-05
CAU Number (if applicable): 417
Sector Designation: CNTA
Housekeeping Site General Location: Central Nevada Test Site, UC-1
Elevation: 1852.737 m
Northing: 4,276,510.49 m (UTM Zone 11) **Latitude:** 38 38 10.6267
Easting: 568,547.73 m (UTM Zone 11) **Longitude:** 116 12 47.9144

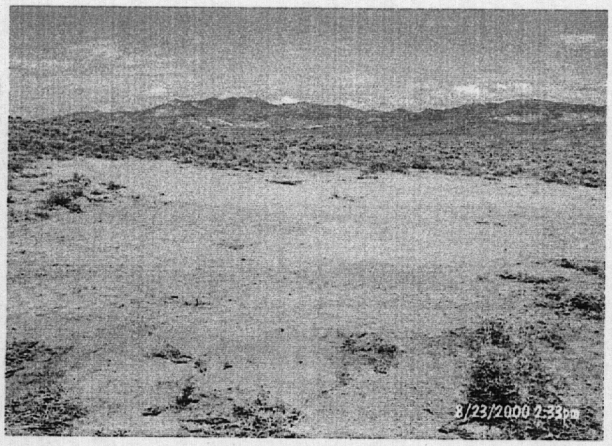
Coordinate/Elevation Data Obtained from: North American Datum, 1927.

Site Access Route: From Tonopah, proceed northeast on Highway 6 for approximately 80 miles to Moores Station road. Take a left onto Moores Station road and follow for approximately 14 miles northwest to a four way dirt intersection. Proceed west through the intersection for approximately 1.5 miles to the UC-1 site. CAS 58-44-05 is located approximately 150 yards northeast of UC-1 ground zero.

Waste Item(s) Originally at Site	Apparent Waste Type*
Grout pile	Ordinary

* Ordinary, Scrap Metal, Asbestos, PCB, Salvageable, Hazardous, Radioactive, Mixed, Unknown, Other

Housekeeping Site Prior to Clean Up
(taken 08/23/2000)



Housekeeping Site After Clean Up
(taken 08/23/2000)

Current Site Description/Observations: This CAS was first identified by the IT Off-sites group in a site survey performed on February 13, 1996. The grout pile measured approximately 35 by 35 feet and 3 feet in height. The grout pile was removed on August 23, 2000, using a front-end loader and was used in the construction of the UC-1 Central Mud Pit (58-09-01) cover. The current condition of the former location of the grout pile is clear of all waste material.

X **No Further Action Required at Housekeeping Site**

Kevin B. Campbell	Kevin B. Campbell	07/16/2001
Corrective Action Coordinator/Designee	**Signature**	**Date**

Sectored Housekeeping Site Closure Verification Form

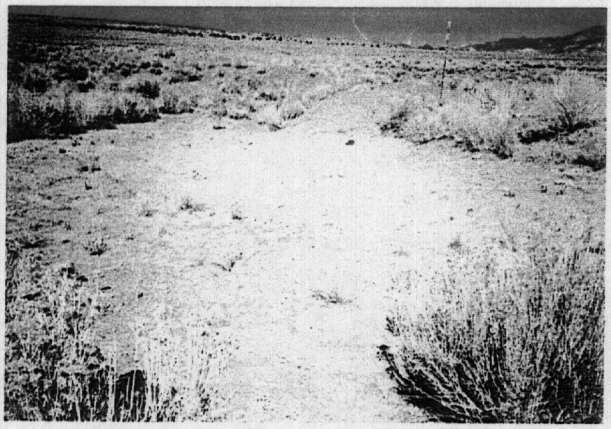
Closure Verification Date: 08/23/00
CAS Number (if applicable): 58-98-03
CAU Number (if applicable): 417
Sector Designation: CNTA
Housekeeping Site General Location: Central Nevada Test Site, UC-1
Elevation: 1839.427 m
Northing: 4,275,974.63 m (UTM Zone 11) **Latitude:** 38 37 53.2314
Easting: 568,589.68 m (UTM Zone 11) **Longitude:** 116 12 46.3695

Coordinate/Elevation Data Obtained from: North American Datum, 1927.

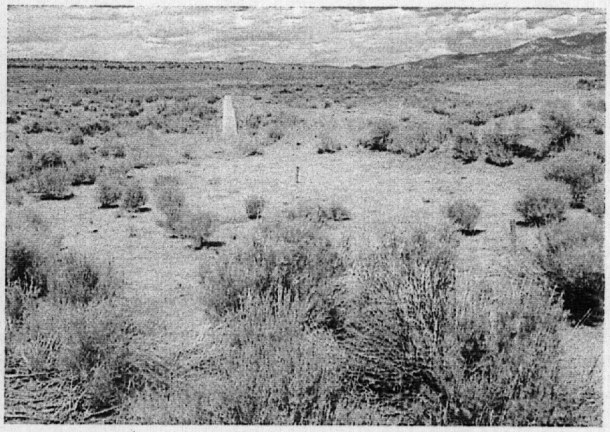
Site Access Route: From Tonopah, proceed northeast on Highway 6 for approximately 80 miles to Moores Station road. Take a left onto Moores Station road and follow for approximately 14 miles northwest to a four way dirt intersection. Proceed west through the intersection for approximately 1.5 miles to the UC-1 site. CAS 58-98-03 is the berm adjacent to the east side of Mud Pit A (58-09-02 marked by four above-grade concrete monuments) which is approximately 60 ft west of the cover fence line.

Waste Item(s) Originally at Site	Apparent Waste Type*
Metal debris, wood, cloth and piping.	Ordinary

* Ordinary, Scrap Metal, Asbestos, PCB, Salvageable, Hazardous, Radioactive, Mixed, Unknown, Other



Housekeeping Site (berm) Prior to Closure
(taken 02/13/1996)



Housekeeping Site After Closure
(taken 06/07/2001)

Current Site Description/Observations:
This CAS was first identified by the IT Off-sites group in a site survey performed on February 13, 1996. The waste was scattered on a berm adjacent to UC-1 Mud Pit A (CAS 58-09-02). The berm measures approximately 320 ft long and 3 ft high. The waste was removed on June 23, 1998. The waste was discarded as sanitary trash. The current condition CAS 58-98-03 is clean of all discarded waste material.

X **No Further Action Required at Housekeeping Site**

Kevin B. Campbell	Kevin B. Campbell	07/16/2001
Corrective Action Coordinator/Designee	**Signature**	**Date**

Sectored Housekeeping Site Closure Verification Form

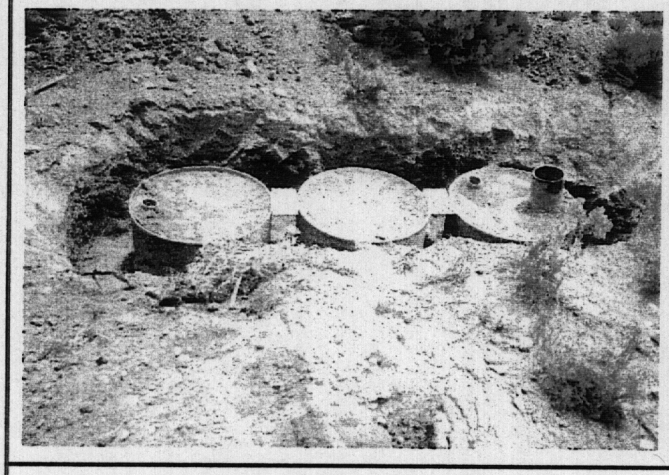
Closure Verification Date: 08/23/00
CAS Number (if applicable): 58-05-03
CAU Number (if applicable): 417
Sector Designation: CNTA
Housekeeping Site General Location: Central Nevada Test Site, UC-3
Elevation: 1746.533 m
Northing: 4,270,715.94 m (UTM Zone 11) **Latitude:** 38 35 02.7630
Easting: 568,131.14 m (UTM Zone 11) **Longitude:** 116 13 07.1842

Coordinate/Elevation Data Obtained from: North American Datum, 1927.

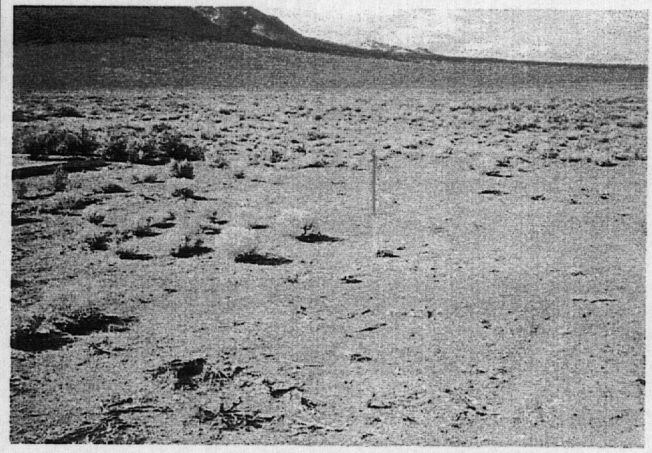
Site Access Route: From Tonopah, proceed northeast on Highway 6 for approximately 80 miles to Moores Station road. Take Moores Station road northwest for approximately 14 miles to a four way intersection. Go south (left) for approx. 2 miles, past the UC-3 access road, then west (right) for approx. 200 yards to UC-3 Recording Trailer Park. CAS 58-05-03 is located approx. 100 feet north of road and 10 feet east of a concrete slab.

Waste Item(s) Originally at Site	Apparent Waste Type*
Underground Storage Tank, soil	Ordinary / Scrap metal

* Ordinary, Scrap Metal, Asbestos, PCB, Salvageable, Hazardous, Radioactive, Mixed, Unknown, Other



Housekeep Site During Closure
(taken 06/16/1998)



Housekeeping Site After Closure
(taken 04/10/2001)

Current Site Description/Observations: This CAS was first identified by the IT Off-sites group on October 27, 1997. The UST (three 55 gallon drums) was removed on June 16, 1998. The drums and all hydrocarbon impacted soil were disposed of at the NTS hydrocarbon landfill. Soil sample results verified that all hydrocarbon impacted soil was removed during closure. The UST excavation was backfilled with clean soil. UST closure notification was sent by the DOE/NV to NDEP on 12/30/1998. The current condition of CAS 58-05-03 is clean closed.

X **No Further Action Required at Housekeeping Site**

Kevin B. Campbell	Kevin B. Campbell	07/16/2001
Corrective Action Coordinator/Designee	**Signature**	**Date**

Sectored Housekeeping Site Closure Verification Form

Closure Verification Date: 08/23/00
CAS Number (if applicable): 58-05-05
CAU Number (if applicable): 417
Sector Designation: CNTA
Housekeeping Site General Location: Central Nevada Test Site, UC-3
Elevation: 1756.937 m
Northing: 4,271,807.50 m (UTM Zone 11) **Latitude:** 38 35 38.1630
Easting: 568,171.37 m (UTM Zone 11) **Longitude:** 116 13 05.1375

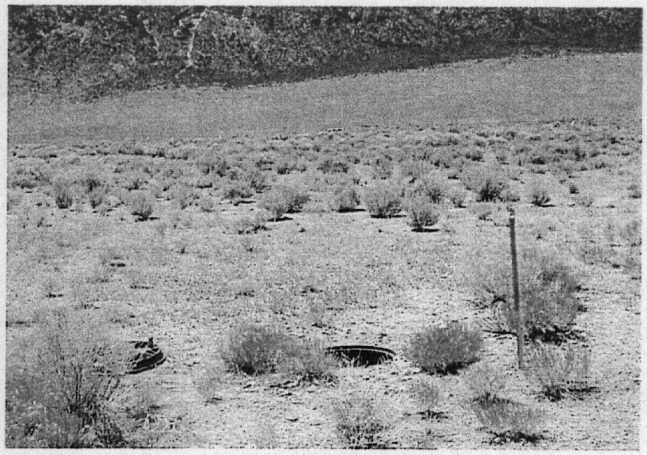
Coordinate/Elevation Data Obtained from: North American Datum, 1927.

Site Access Route: From Tonopah, proceed northeast on Highway 6 for approximately 80 miles to Moores Station road. Take Moores Station road northwest for approximately 14 miles to a four way intersection. Go south (left) for approx. 1.5 miles, then west (right) for approx. 200 yards to UC-3 Area. CAS 58-05-05 is located approx. 160 feet southeast of the UC-3 emplacement hole.

Waste Item(s) Originally at Site	Apparent Waste Type*
Septic tank	Ordinary

* Ordinary, Scrap Metal, Asbestos, PCB, Salvageable, Hazardous, Radioactive, Mixed, Unknown, Other

Housekeeping Site During Closure
(taken 06/23/1998)



Housekeeping Site After Closure
(taken 06/07/2001)

Current Site Description/Observations: This CAS was first identified by the IT Off-sites group in a site visit on October 28,1997. The tank was sampled, pumped (7,570 liters [2,000 gallons] of sludge was removed and disposed of at an approved facility), and backfilled with clean material on June 23, 1998. Acknowledge of septic tank closure was received by the NNSA/NV from the NV Department of Health on 3 May 2001. The current condition of CAS 58-05-05 is clean closed.

X No Further Action Required at Housekeeping Site

Kevin B. Campbell Kevin B. Campbell 07/16/2001
Corrective Action Coordinator/Designee **Signature** **Date**

Sectored Housekeeping Site Closure Verification Form

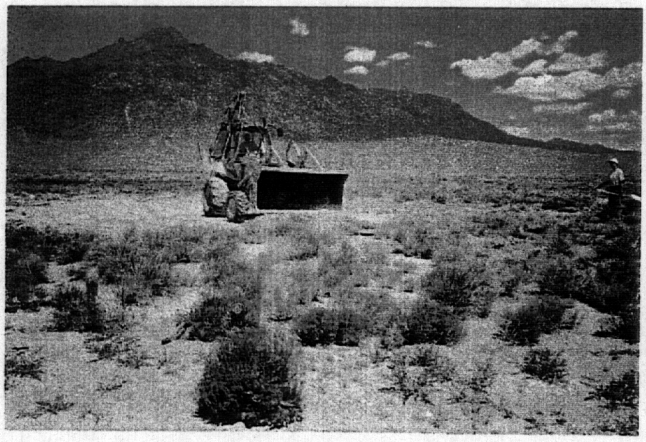
Closure Verification Date: 08/23/00
CAS Number (if applicable): 58-05-06
CAU Number (if applicable): 417
Sector Designation: CNTA
Housekeeping Site General Location: Central Nevada Test Site, UC-3
Elevation: 1745.546 m
Northing: 4,270,593.48 m (UTM Zone 11) **Latitude:** 38 34 58.8078
Easting: 568,067.94 m (UTM Zone 11) **Longitude:** 116 13 09.8393

Coordinate/Elevation Data Obtained from: North American Datum, 1927.

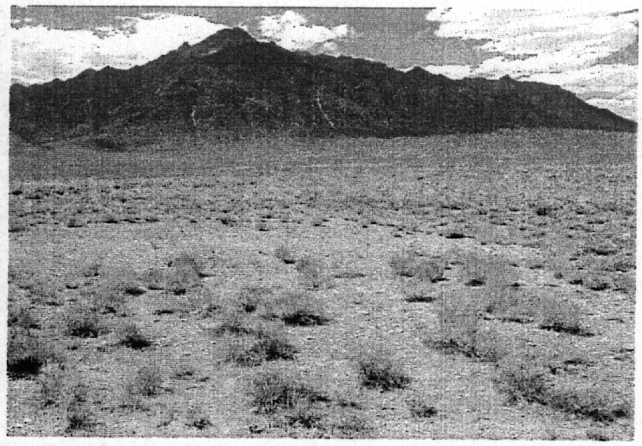
Site Access Route: From Tonopah, proceed northeast on Highway 6 for approximately 80 miles to Moores Station road. Take Moores Station road northwest for approximately 14 miles to a four way intersection. Go south (left) for approx. 2 miles, past the UC-3 access road, then west (right) for approx. 200 yards to UC-3 Recording Trailer Park. CAS 58-05-06 is located approx. 20 feet north of road.

Waste Item(s) Originally at Site	Apparent Waste Type*
Concrete cast septic tank	Ordinary

* Ordinary, Scrap Metal, Asbestos, PCB, Salvageable, Hazardous, Radioactive, Mixed, Unknown, Other



Housekeeping Site During Closure
(taken 06/24/1998)



Housekeeping Site After Closure
(taken 06/07/2001)

Current Site Description/Observations: This CAS was first identified by the IT Off-sites staff during a site visit on October 28, 1997. The tank was empty of liquid; a solid sample was collected in April 1998. Analysis showed no Contaminate of Concern above action levels. The septic tank was backfilled with clean material on June 24 , 1998. Acknowledge of septic tank closure was received by the NNSA/NV from NV Department of Health on 3 May 2001. The current condition of CAS 58-05-06 is clean closed.

X **No Further Action Required at Housekeeping Site**

Kevin B. Campbell Kevin B. Campbell 07/16/2001
Corrective Action Coordinator/Designee **Signature** **Date**

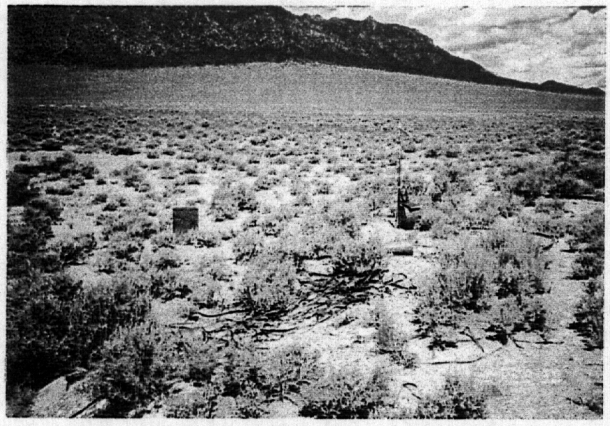
Sectored Housekeeping Site Closure Verification Form

Closure Verification Date: 08/23/00
CAS Number (if applicable): 58-98-01
CAU Number (if applicable): 417
Sector Designation: CNTA
Housekeeping Site General Location: Central Nevada Test Site, UC-3
Elevation: 1757.775 m
Northing: 4,271,920.85 m (UTM Zone 11) **Latitude:** 38 35 41.8931
Easting: 567,979.71 m (UTM Zone 11) **Longitude:** 116 13 13.0201
Coordinate/Elevation Data Obtained from: North American Datum, 1927.

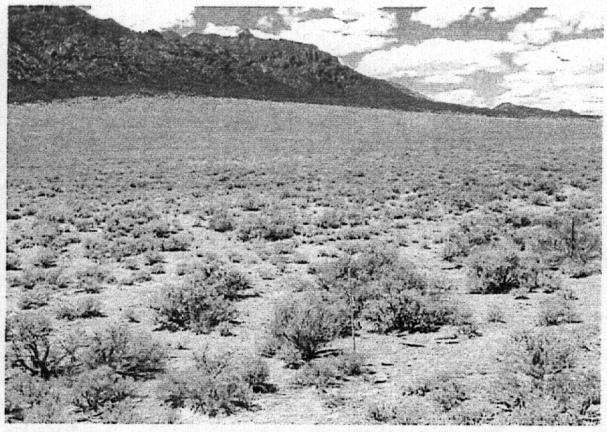
Site Access Route: From Tonopah, proceed northeast on Highway 6 for approximately 80 miles to Moores Station road. Take Moores Station road northwest for approximately 14 miles to a four way intersection. Go south (left) for approx. 1.5 miles, then west (right) for approx. 200 yards to UC-3. CAS 58-98-01 is located approx. 90 ft west of the UC-3 emplacement hole on the west side of a low berm.

Waste Item(s) Originally at Site	Apparent Waste Type*
Trash and metal debris	Ordinary / scrap metal

* Ordinary, Scrap Metal, Asbestos, PCB, Salvageable, Hazardous, Radioactive, Mixed, Unknown, Other



Housekeeping Site Prior to Clean Up
(taken 06/23/1998)



Housekeeping Site After Clean Up
(taken 06/07/2001)

Current Site Description/Observations: This CAS was first identified by the IT Off-sites group in a site survey performed on February 13, 1996. The waste was removed on June 23, 1998. Scrap metal was sent to NTS salvage and the remainder disposed of at the NTS U10c Landfill. The current condition of CAS 58-98-01 is clean of all waste material.

X No Further Action Required at Housekeeping Site

Kevin B. Campbell	Kevin B. Campbell	07/16/2001
Corrective Action Coordinator/Designee	**Signature**	**Date**

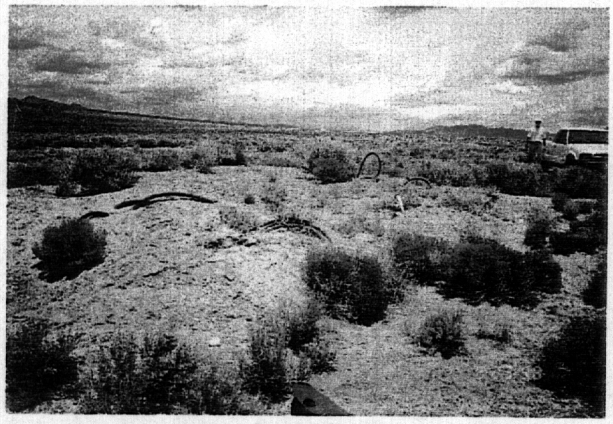
Sectored Housekeeping Site Closure Verification Form

Closure Verification Date: 08/23/00
CAS Number (if applicable): 58-98-02
CAU Number (if applicable): 417
Sector Designation: CNTA
Housekeeping Site General Location: Central Nevada Test Site, UC-3
Elevation: 1756.515 m
Northing: 4,271,747.60 m (UTM Zone 11) **Latitude:** 38 35 36.2717
Easting: 567,983.43 m (UTM Zone 11) **Longitude:** 116 13 12.9271
Coordinate/Elevation Data Obtained from: North American Datum, 1927.

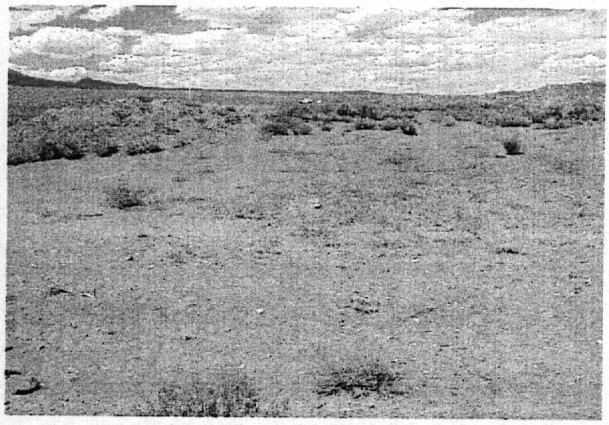
Site Access Route: From Tonopah, proceed northeast on Highway 6 for approximately 80 miles to Moores Station road. Take Moores Station road northwest for approximately 14 miles to a four way intersection. Go south (left) for approx. 1.5 miles, then west (right) for approx. 200 yards to UC-3. CAS 58-98-02 is located approx. 185 ft southwest of the UC-3 emplacement hole.

Waste Item(s) Originally at Site	Apparent Waste Type*
Trash and metal debris	Ordinary / scrap metal

* Ordinary, Scrap Metal, Asbestos, PCB, Salvageable, Hazardous, Radioactive, Mixed, Unknown, Other



Housekeeping Site Prior to Clean Up
(taken 06/23/1998)



Housekeeping Site During Clean Up
(taken 06/07/2001)

Current Site Description/Observations: This CAS was first identified by the IT Off-sites group in a site survey performed on February 13, 1996. The waste was removed on June 23, 1998. Scrap metal was sent to NTS salvage and the remainder disposed of at the NTS U10c Landfill. The current condition CAS 58-98-02 is clean of all waste material.

X **No Further Action Required at Housekeeping Site**

Kevin B. Campbell	Kevin B. Campbell	07/16/2001
Corrective Action Coordinator/Designee	**Signature**	**Date**

Sectored Housekeeping Site Closure Verification Form

Closure Verification Date: 08/23/00
CAS Number (if applicable): 58-98-04
CAU Number (if applicable): 417
Sector Designation: CNTA
Housekeeping Site General Location: Central Nevada Test Site, UC-3
Elevation: 1756.172 m
Northing: 4,271,781.88 m (UTM Zone 11) **Latitude:** 38 35 37.3676
Easting: 568,041.96 m (UTM Zone 11) **Longitude:** 116 13 10.4957
Coordinate/Elevation Data Obtained from: North American Datum, 1927.

Site Access Route: From Tonopah, proceed northeast on Highway 6 for approximately 80 miles to Moores Station road. Take Moores Station road northwest for approximately 14 miles to a four way intersection. Go south (left) for approx. 1.5 miles, then west (right) for approx. 200 yards to UC-3. CAS 58-98-04 is located approx. 130 ft south of the UC-3 emplacement hole.

Waste Item(s) Originally at Site	Apparent Waste Type*
Trash and metal debris	Ordinary / scrap metal

* Ordinary, Scrap Metal, Asbestos, PCB, Salvageable, Hazardous, Radioactive, Mixed, Unknown, Other

X	
No Before Photograph of Housekeeping Site Available	Housekeeping Site After Closure (taken 04/10/2001)

Current Site Description/Observations: This CAS was first identified by the IT Off-sites group in a site survey performed on February 13, 1996. The waste was removed on June 23, 1998. Scrap metal was sent to NTS salvage, remainder disposed of at the NTS U10c Landfill. The current condition of CAS 58-98-04 is clean of all waste material.

X **No Further Action Required at Housekeeping Site**

Kevin B. Campbell	Kevin B. Campbell	07/16/2001
Corrective Action Coordinator/Designee	**Signature**	**Date**

Sectored Housekeeping Site Closure Verification Form

Closure Verification Date: 08/23/00
CAS Number (if applicable): 58-99-01
CAU Number (if applicable): 417
Sector Designation: CNTA
Housekeeping Site General Location: Central Nevada Test Site, UC-3
Elevation: 1757.074 m
Northing: 4,271,857.81 m (UTM Zone 11) **Latitude:** 38 35 39.7923
Easting: 568,181.68 m (UTM Zone 11) **Longitude:** 116 13 04.6936

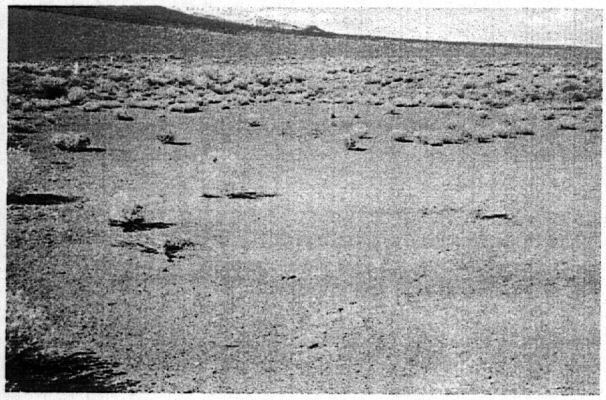
Coordinate/Elevation Data Obtained from: North American Datum, 1927.

Site Access Route: From Tonopah, proceed northeast on Highway 6 for approximately 80 miles to Moores Station road. Take Moores Station road northwest for approximately 14 miles to a four way intersection. Go south (left) for approx. 1.5 miles, then west (right) for approx. 200 yards to UC-3. CAS 58-99-01 is located approx. 150 ft east of the UC-3 emplacement hole.

Waste Item(s) Originally at Site	Apparent Waste Type*
Underground storage tank - 55 gallon drums	Ordinary / scrap metal

* Ordinary, Scrap Metal, Asbestos, PCB, Salvageable, Hazardous, Radioactive, Mixed, Unknown, Other

Housekeeping Site During Closure
(taken 06/16/1998)



Housekeeping Site After Closure
(taken 04/10/2001)

Current Site Description/Observations:
This CAS was first identified by the IT Off-sites group on October 27, 1997. The UST (four 55 gallon drums) was removed on June 16, 1998. The drums and all hydrocarbon impacted soil were disposed of at the NTS hydrocarbon landfill. Soil sample results verified that all hydrocarbon impacted soil was removed during closure. The UST excavation was backfilled with clean soil. UST closure notification was sent by the DOE/NV to NDEP on 12/30/1998. The current condition of CAS 58-99-01 is clean closed.

_X_ No Further Action Required at Housekeeping Site

Kevin B. Campbell	Kevin B. Campbell	07/16/2001
Corrective Action Coordinator/Designee	**Signature**	**Date**

APPENDIX E

UC-3 UNDERGROUND STORAGE TANK AND SEPTIC TANK CLOSURE DOCUMENTATION

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KENNY C. GUINN
Governor

CHARLOTTE CRAWFORD
Director

YVONNE SYLVA
Administrator

MARY E. GUINAN, M.D., Ph.D.
State Health Officer

STATE OF NEVADA
DEPARTMENT OF HUMAN RESOURCES
HEALTH DIVISION
BUREAU OF HEALTH PROTECTION SERVICES

Bureau Administration
1179 Fairview Drive, Ste. 201
Carson City, NV 89701-5405
(775) 687-6353
Fax (775) 687-5197

☐ Public Health Engineering
1179 Fairview Drive, Ste. 101
Carson City, NV 89701-5405
(775) 687-4754
Fax (775) 687-5699

☐ Drinking Water
State Revolving Fund
1179 Fairview Drive, Ste. 204
Carson City, NV 89701-5405
(775) 687-4750
Fax (775) 687-3218

☐ Radiological Health
1179 Fairview Drive, Ste. 102
Carson City, NV 89701-5405
(775) 687-5394
Fax (775) 687-5751

☐ Environmental Health
1179 Fairview Drive, Ste. 104
Carson City, NV 89701-5405
(775) 687-4750
Fax (775) 687-5751

☐ Health Protection Services
620 Belrose Street, Ste. 101
Las Vegas, NV 89107
Engineering and Food
(702) 486-5068
Radiological Health
(702) 486-5280
Fax (702) 486-5024

☐ Health Protection Services
850 Elm Street
Elko, NV 89801-3349
(775) 753-1138/1140

☐ Health Protection Services
475 W. Haskell Street, Rm. 38
Winnemucca, NV 89445
(775) 623-6588

☐ Health Protection Services
155 N. Taylor Street, Ste. 199
Fallon, NV 89406-3324
(775) 423-2281

☐ Health Protection Services
P.O. Box 939
Ely, NV 89301-0939
(775) 289-3325

☐ Health Protection Services
P.O. Box 667
Tonopah, NV 89049-0667
(775) 482-3997

☐ Health Protection Services
250 N. Highway 160, Ste. 5
Pahrump, NV 89048
(775) 751-7415

May 3, 2001

Runore Wycoff, Director
Environmental Restoration Division
DOE/NV Operations Office
P.O. Box 98518
Las Vegas, NV 89193-8518

RE: **Abandonment of Septic Tanks at Central Nevada Test Site UC-3**

Dear Mr. Wycoff:

An inspection was conducted by the Bureau of Health Protection Services on July 16, 1998 at the Central Nevada Test Site. The purpose of this inspection was to determine the status of two abandoned septic tanks that had served the site's Recording Trailer Park and Support Trailer Park.

This is to confirm the above referenced tanks have been abandoned in accordance with NAC 444.818(9).

If you have any questions, please contact me at 486-5068.

Sincerely,

James H. Larson, P.E.
Public Health Engineer
Bureau of Health Protection Services

cc: Galen Denio, Manager, Public Health Engineering

ACTION
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MGR ✓
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(O) 3507

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Department of Energy
Nevada Operations Office
P. O. Box 98518
Las Vegas, NV 89193-8518

DEC 30 1998

Paul J. Liebendorfer, P.E., Chief
Department of Conservation and Natural Resources
Division of Environmental Protection
333 W. Nye Lane, Room 138
Carson City, NV 89706-0851

NOTIFICATION OF CLOSURE FOR TWO UNDERGROUND STORAGE TANKS (USTs) AT THE CENTRAL NEVADA TEST AREA (CNTA) CORRECTIVE ACTION UNIT (CAU) 417

Please find enclosed a copy of the U.S. Environmental Protection Agency (EPA) Form 7530-1, Notifications for USTs, which identifies two abandoned USTs that were permanently closed by removal. The two USTs were closed by removal from the UC-3 land withdrawal area at CNTA northeast of Tonopah, Nevada. The permanently closed tanks are as follows:

- CAS 58-99-01 UST located southeast of UC-3
- CAS 58-05-03 UST located at the UC-3 Recording Trailer Park

Samples of the UST contents were collected and analyzed for Total Petroleum Hydrocarbon (TPH), total Resource Conservation and Recovery Act metals, and Benzene, Toluene, Ethylbenzene and Total Xylenes (BTEX). Results for metals and BTEX were well below EPA Region 9 Preliminary Remediation Goals (PRGs). Complete analytical results are presented in the "Addendum to the Corrective Action Investigation Report for Central Nevada Test Area, CAU 417," DOE/NV-524-Addendum Appendix D, 1998. TPH results were below the Nevada state action level of 100 mg/kg. The tanks were removed on June 16, 1998.

During the tank removal activities, field screening tests indicated the presence of TPH in the soil at approximately one foot below the USTs. Hence, the area beneath each UST was over excavated until screening indicated clean soil was reached. The excavated soils and crushed tanks were transported to the Nevada Test Site Area 6 Hydrocarbon Landfill.

Verification soil samples were then collected from beneath each of the USTs at 5.5 feet and 11 feet below ground surface; i.e., at approximately 1 foot and 6.5 feet below each UST. The samples were analyzed for TPH by NEL Laboratories in Las Vegas, Nevada. Results for all

ENV 37-5

samples showed TPH present at less than 100 mg/kg, indicating the tank closures were clean. Enclosed, Table 1 is a summary of the analytical results for the collected verification samples. Also enclosed are copies of the certificates of the laboratory results for the TPH analyses.

Please direct any questions or comments to Peter A. Sanders, of my staff, at (702) 295-1037.

for Runore C. Wycoff, Director
Environmental Restoration Division

ERD:PAS

Enclosures:
As stated

cc w/encls:
M. D. McKinnon, NDEP,
Las Vegas, NV

cc w/o encls:
K. K. Beckley, NDEP,
Carson City, NV
J. J. Johnson, NDEP,
Carson City, NV
D. A. Bedsun, DTRA,
Mercury, NV
P. S. Adams, IT,
Las Vegas, NV
T. J. White, IT,
Las Vegas, NV
D. D. Madsen, BN,
Mercury, NV
K. A. Hoar, ESHD, DOE/NV,
Las Vegas, NV
P. L. Hall, ERD, DOE/NV,
Las Vegas, NV

PETER G. MORROS, *Director*
ALLEN BIAGGI, *Administrator*
(775) 687-4670
TDD 687-4678
Administration
Water Pollution Control
Facsimile 687-5856
Mining Regulation and Reclamation
Facsimile 684-5259

STATE OF NEVADA
KENNY C. GUINN
Governor

Waste Management
Corrective Actions
Federal Facilities
Air Quality
Water Quality Planning
Facsimile 687-6396

DEPARTMENT OF CONSERVATION AND NATURAL RESOURCES
DIVISION OF ENVIRONMENTAL PROTECTION
333 W. Nye Lane, Room 138
Carson City, Nevada 89706

May 29, 2001

ACTION
INFO ERD AMEM
MGR ✓
AMBFS
AMTS
AMNS
AMEM ✓
AMPIA

Runore C. Wycoff, Director
Environmental Restoration Division
National Nuclear Security Administration
Nevada Operations Office
P.O. Box 98593-8518
Las Vegas, Nevada 89193-8518

RE: Closure Documentation Received for Underground Storage Tanks; CAU 417 - Central Nevada Test Area

Dear Ms. Wycoff:

The Nevada Division of Environmental Protection (NDEP) has received the Underground Storage Tank Notification Form (USEPA Form 7530) for two underground storage tanks (USTs) that were discovered abandoned at the Central Nevada Test Area (CAU 417) during field operations in 1998. Along with a letter dated December 30, 1998 which accompanied the 7530 Form, the following information was provided:

- Two tanks were permanently closed on July 16, 1998;
- The tanks are numbered CAS 58-99-01 and CAS 58-05-03;
- The tanks were welded 55 gallon steel drums; were used to contain diesel; had approximate volumes of 220 and 165 gallons; and were last used in 1968.

During tank removal, field screening tests indicated the presence of TPH in soil below the USTs. Over-excavation was performed below each tank site until screening indicated clean soil had been reached. Removed soil and the crushed USTs were transported to the Nevada Test Site Area 6 Hydrocarbon Landfill. Confirmatory soil samples were collected as part of a site assessment as required by federal regulation 40 CFR Part 280.72 and analyzed for Total Petroleum Hydrocarbons (TPH). Results for all samples showed TPH concentrations at less than

the action level of 100 mg/kg. The highest reported sampling result was 81 mg/kg TPH at the south end of CAS 58-05-03.

Upon review of the data presented, the NDEP concurs that the tank removals and the subsequent removal of contaminated soils were done satisfactorily and conform to State of Nevada regulations. Confirmatory soil sampling results indicate that remaining TPH is below the State action level. The NDEP will not require remedial action involving these two tanks. No remedial action is based upon the information and data provided to date (7530 Form and December 30, 1998 DOE letter). This action is subject to the qualifications of the data and information presented. If future conditions warrant, NDEP may request further information, data, investigation and/or remediation.

Additionally, steps to formally close CAS 58-99-01 and CAS 58-05-03 must be completed under the provisions of the FFACO. These two CASs, along with the other CNTA surface sites, must be included in the Closure Report for CAU 417. If you have any questions regarding tank closure issues, please contact Sigurd Jaunarajs of my staff at (775) 687-4670, extension 3030.

Sincerely,

Paul J. Liebendorfer, P.E.
Chief
Bureau of Federal Facilities

PJL/SRJ/js

cc: Karen Beckley, NDEP/CC
Matt DeBurle, NDEP/CC
Patti Hall, ERD, NNSA/NV
Mike McKinnon, NDEP/LV
Monica Sanchez, ERD, NNSA/NV
Pete Sanders, ERD, NNSA/NV

APPENDIX F

USE RESTRICTION DOCUMENTATION

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CAU Use Restriction Information

CAU Number/Description: CAU 417 (Central Nevada Test Area Surface, NV)

Applicable CAS Numbers/Descriptions: CAS No. 58-09-01 / UC-1 Central Mud Pit Fence

Contact (organization/project): NNSA/NV Off-Sites Project Manager

Surveyed Area (UTM coordinates, Zone 11, NDA 27):
UC-1 CENTRAL MUD PIT FENCE starting at the NW corner and moving clockwise around fence.

NW corner:	4276101.25 mN,	568640.16 mE
Clockwise	4276099.54 mN,	568690.78 mE
	4276098.33 mN,	568696.77 mE
	4276068.95 mN,	568833.42 mE
	4276003.38 mN,	568863.50 mE
	4275972.49 mN,	568838.03 mE
	4275953.45 mN,	568803.86 mE

Survey Date 09/25/2000 **Survey Method (GPS, etc.)** Transit Survey **Datum** NAD 27

Site Monitoring Requirements: Visual inspections as specified in the Closure Report

Monitoring Frequency (quarterly, annually?): Inspections twice yearly to commence six months after the closure concurrence date.

Use Restrictions

The future use of any land related to this Corrective Action Unit (CAU), as described by the above surveyed location, is restricted from any DOE, BLM or USFS activity that may alter or modify the containment control as approved by the state of Nevada and identified in the CAU Closure Report or other CAU documentation unless appropriate concurrence is obtained in advance.

Comments: See the Closure Report for additional information on the condition of the site(s) and any monitoring and/or inspection requirements.

Submitted By: Monica Sanchez **Date:** 7/3/01

Attachments: Survey Map

CAU Use Restriction Information

CAU Number/Description: CAU 417 (Central Nevada Test Area Surface, NV)

Applicable CAS Numbers/Descriptions: CAS No. 58-09-02 / UC-1 Mud Pit A

Contact (organization/project): NNSA/NV Off-Sites Project Manager

Surveyed Area (UTM coordinates, Zone 11, NDA 27):

UC-1 MUD PIT A

NE corner:	4276025.24 mN,	568570.16 mE
SE corner:	4275993.63 mN,	568579.76 mE
SW corner:	4275992.31 mN,	568559.58 mE
NW corner:	4276018.69 mN,	568551.31 mE

Survey Date 04/10/2001 **Survey Method (GPS, etc.)** Transit Survey **Datum** NAD 27

Site Monitoring Requirements: Visual inspections as specified in the Closure Report

Monitoring Frequency (quarterly, annually?): Inspections twice yearly to commence six months after the closure concurrence date.

Use Restrictions

The future use of any land related to this Corrective Action Unit (CAU), as described by the above surveyed location, is restricted from any DOE, BLM or USFS activity that may alter or modify the containment control as approved by the state of Nevada and identified in the CAU Closure Report or other CAU documentation unless appropriate concurrence is obtained in advance.

Comments: See the Closure Report for additional information on the condition of the site(s) and any monitoring and/or inspection requirements.

Submitted By: Monica Sanchez **Date:** 7/03/01

Attachments: Survey Map

CAU Use Restriction Information

CAU Number/Description: CAU 417 (Central Nevada Test Area Surface, NV)

Applicable CAS Numbers/Descriptions: CAS No. 58-09-05 / UC-1 Mud Pit E

Contact (organization/project): NNSA/NV Off-Sites Project Manager

Surveyed Area (UTM coordinates, Zone 11, NDA 27):

UC-1 MUD PIT E

NE corner:	4276310.02 mN,	568438.16 mE
SE corner:	4276274.84 mN,	568433.69 mE
SW corner:	4276293.13 mN,	568394.17 mE
NW corner:	4276316.81 mN,	568403.87 mE

Survey Date 04/10/2001 **Survey Method (GPS, etc.)** Transit Survey **Datum** NAD 27

Site Monitoring Requirements: Visual inspections as specified in the Closure Report

Monitoring Frequency (quarterly, annually?): Inspections twice yearly to commence six months after the closure concurrence date.

Use Restrictions

The future use of any land related to this Corrective Action Unit (CAU), as described by the above surveyed location, is restricted from any DOE, BLM or USFS activity that may alter or modify the containment control as approved by the state of Nevada and identified in the CAU Closure Report or other CAU documentation unless appropriate concurrence is obtained in advance.

Comments: See the Closure Report for additional information on the condition of the site(s) and any monitoring and/or inspection requirements.

Submitted By: Monica Sanchez **Date:** 7/03/01

Attachments: Survey Map

CAU Use Restriction Information

CAU Number/Description: CAU 417 (Central Nevada Test Area Surface, NV)

Applicable CAS Numbers/Descriptions: CAS No. 58-09-06 / UC-3 Mud Pit E

Contact (organization/project): NNSA/NV Off-Sites Project Manager

Surveyed Area (UTM coordinates, Zone 11, NDA 27):

UC-3 MUD PIT E

NE corner:	4271893.96 mN,	568038.66 mE
SE corner:	4271869.14 mN,	568029.52 mE
SW corner:	4271875.25 mN,	567990.52 mE
NW corner:	4271906.84 mN,	567991.36 mE

Survey Date 04/10/2001 **Survey Method (GPS, etc.)** Transit Survey **Datum** NAD 27

Site Monitoring Requirements: Visual inspections as specified in the Closure Report

Monitoring Frequency (quarterly, annually?): Inspections twice yearly to commence six months after the closure concurrence date.

Use Restrictions

The future use of any land related to this Corrective Action Unit (CAU), as described by the above surveyed location, is restricted from any DOE, BLM or USFS activity that may alter or modify the containment control as approved by the state of Nevada and identified in the CAU Closure Report or other CAU documentation unless appropriate concurrence is obtained in advance.

Comments: See the Closure Report for additional information on the condition of the site(s) and any monitoring and/or inspection requirements.

Submitted By: Monica Sanchez **Date:** 7/03/01

Attachments: Survey Map

CAU Use Restriction Information

CAU Number/Description: CAU 417 (Central Nevada Test Area Surface, NV)

Applicable CAS Numbers/Descriptions: CAS No. 58-25-01 / UC-3 Area E Spill Southern Outlier

Contact (organization/project): NNSA/NV Off-Sites Project Manager

Surveyed Area (UTM coordinates, Zone 11, NDA 27):
UC-3 AREA E SPILL SOUTHERN OUTLIER starting at west most monument and proceeding clockwise

4271862.04 mN,	567969.62 mE
4271870.18 mN,	567990.17 mE
4271862.49 mN,	568043.85 mE
4271896.46 mN,	568084.73 mE
4271893.41 mN,	568103.35 mE
4271836.63 mN,	568083.27 mE
4271821.06 mN,	568004.52 mE

Survey Date 04/10/2001 **Survey Method (GPS, etc.)** Transit Survey **Datum** NAD 27

Site Monitoring Requirements: Visual inspections as specified in the Closure Report

Monitoring Frequency (quarterly, annually?): Inspections twice yearly to commence six months after the closure concurrence date.

Use Restrictions

The future use of any land related to this Corrective Action Unit (CAU), as described by the above surveyed location, is restricted from any DOE, BLM or USFS activity that may alter or modify the containment control as approved by the state of Nevada and identified in the CAU Closure Report or other CAU documentation unless appropriate concurrence is obtained in advance.

Comments: See the Closure Report for additional information on the condition of the site(s) and any monitoring and/or inspection requirements.

Submitted By: Monica Sanchez **Date:** 7/03/01

Attachments: Survey Map

CAU Use Restriction Information

CAU Number/Description: CAU 417 (Central Nevada Test Area Surface, NV)

Applicable CAS Numbers/Descriptions: CAS No. 58-10-01 / UC-3 Shaker Pad Area S

Contact (organization/project): NNSA/NV Off-Sites Project Manager

Surveyed Area (UTM coordinates, Zone 11, NDA 27):

UC-3 SHAKER PAD AREA S

NE corner:	4271965.29 mN,	568154.34 mE
SE corner:	4271911.05 mN,	568138.12 mE
SW corner:	4271912.87 mN,	568088.36 mE
NW corner:	4271979.68 mN,	568100.65 mE

Survey Date 04/10/2001 **Survey Method (GPS, etc.)** Transit Survey **Datum** NAD 27

Site Monitoring Requirements: Visual inspections as specified in the Closure Report

Monitoring Frequency (quarterly, annually?): Inspections twice yearly to commence six months after the closure concurrence date.

Use Restrictions

The future use of any land related to this Corrective Action Unit (CAU), as described by the above surveyed location, is restricted from any DOE, BLM or USFS activity that may alter or modify the containment control as approved by the state of Nevada and identified in the CAU Closure Report or other CAU documentation unless appropriate concurrence is obtained in advance.

Comments: See the Closure Report for additional information on the condition of the site(s) and any monitoring and/or inspection requirements.

Submitted By: Monica Sanchez **Date:** 7/03/01

Attachments: Survey Map

CAU Use Restriction Information

CAU Number/Description: CAU 417 (Central Nevada Test Area Surface, NV)

Applicable CAS Numbers/Descriptions: CAS No. 58-09-03 / UC-4 Mud Pit A

Contact (organization/project): NNSA/NV Off-Sites Project Manager

Surveyed Area (UTM coordinates, Zone 11, NDA 27):

UC-4 MUD PIT A

NE corner:	4281277.49 mN,	568013.92 mE
SE corner:	4281212.98 mN,	568003.57 mE
SW corner:	4281218.55 mN,	567976.45 mE
NW corner:	4281281.79 mN,	567981.55 mE

Survey Date 10/12/1999 **Survey Method (GPS, etc.)** Transit Survey **Datum** NAD 27

Site Monitoring Requirements: Visual inspections as specified in the Closure Report

Monitoring Frequency (quarterly, annually?): Inspections twice yearly to commence six months after the closure concurrence date.

Use Restrictions

The future use of any land related to this Corrective Action Unit (CAU), as described by the above surveyed location, is restricted from any DOE, BLM or USFS activity that may alter or modify the containment control as approved by the state of Nevada and identified in the CAU Closure Report or other CAU documentation unless appropriate concurrence is obtained in advance.

Comments: See the Closure Report for additional information on the condition of the site(s) and any monitoring and/or inspection requirements.

Submitted By: Monica Sanchez **Date:** 7/03/01

Attachments: Survey Map

CAU Use Restriction Information

CAU Number/Description: CAU 417 (Central Nevada Test Area Surface, NV)

Applicable CAS Numbers/Descriptions: CAS No. 58-09-03 / UC-4 Mud Pit B

Contact (organization/project): NNSA/NV Off-Sites Project Manager

Surveyed Area (UTM coordinates, Zone 11, NDA 27):

UC4 MUD PIT B

NE corner:	4281208.37 mN,	568003.03 mE
SE corner:	4281167.27 mN,	567997.03 mE
SW corner:	4281169.94 mN,	567974.11 mE
NW corner:	4281214.13 mN,	567976.22 mE

Survey Date 10/12/1999 **Survey Method (GPS, etc.)** Transit Survey **Datum** NAD 27

Site Monitoring Requirements: Visual inspections as specified in the Closure Report

Monitoring Frequency (quarterly, annually?): Inspections twice yearly to commence six months after the closure concurrence date.

Use Restrictions

The future use of any land related to this Corrective Action Unit (CAU), as described by the above surveyed location, is restricted from any DOE, BLM or USFS activity that may alter or modify the containment control as approved by the state of Nevada and identified in the CAU Closure Report or other CAU documentation unless appropriate concurrence is obtained in advance.

Comments: See the Closure Report for additional information on the condition of the site(s) and any monitoring and/or inspection requirements.

Submitted By: Monica Sanchez **Date:** 7/03/01

Attachments: Survey Map

CAU Use Restriction Information

CAU Number/Description: CAU 417 (Central Nevada Test Area Surface, NV)

Applicable CAS Numbers/Descriptions: CAS No. 58-09-03 / UC-4 Mud Pit C

Contact (organization/project): NNSA/NV Off-Sites Project Manager

Surveyed Area (UTM coordinates, Zone 11, NDA 27):

UC4 MUD PIT C fence corners

NE corner:	4281183.50 mN,	568081.68 mE
SE corner:	4281133.04 mN,	568072.66 mE
SW corner:	4281147.27 mN,	567994.55 mE
NW corner:	4281197.59 mN,	568003.72 mE

Survey Date 09/09/1999 **Survey Method (GPS, etc.)** Transit Survey **Datum** NAD 27

Site Monitoring Requirements: Visual inspections as specified in the Closure Report

Monitoring Frequency (quarterly, annually?): Inspections twice yearly to commence six months after the closure concurrence date.

Use Restrictions

The future use of any land related to this Corrective Action Unit (CAU), as described by the above surveyed location, is restricted from any DOE, BLM or USFS activity that may alter or modify the containment control as approved by the state of Nevada and identified in the CAU Closure Report or other CAU documentation unless appropriate concurrence is obtained in advance.

Comments: See the Closure Report for additional information on the condition of the site(s) and any monitoring and/or inspection requirements.

Submitted By: 7/03/01 Monica Sanchez **Date:** 7/03/01

Attachments: Survey Map

CAU Use Restriction Information

CAU Number/Description: CAU 417 (Central Nevada Test Area Surface, NV)

Applicable CAS Numbers/Descriptions: CAS No. 58-09-03 / UC-4 Mud Pit D

Contact (organization/project): NNSA/NV Off-Sites Project Manager

Surveyed Area (UTM coordinates, Zone 11, NDA 27):

UC4 MUD PIT D

NE corner:	4281161.15 mN,	568134.18 mE
SE corner:	4281126.83 mN,	568119.03 mE
SW corner:	4281139.32 mN,	568075.08 mE
NW corner:	4281165.56 mN,	568081.63 mE

Survey Date 10/12/1999 **Survey Method (GPS, etc.)** Transit Survey **Datum** NAD 27

Site Monitoring Requirements: Visual inspections as specified in the Closure Report

Monitoring Frequency (quarterly, annually?): Inspections twice yearly to commence six months after the closure concurrence date.

Use Restrictions

The future use of any land related to this Corrective Action Unit (CAU), as described by the above surveyed location, is restricted from any DOE, BLM or USFS activity that may alter or modify the containment control as approved by the state of Nevada and identified in the CAU Closure Report or other CAU documentation unless appropriate concurrence is obtained in advance.

Comments: See the Closure Report for additional information on the condition of the site(s) and any monitoring and/or inspection requirements.

Submitted By: Monica Sanchez **Date:** 7/03/01

Attachments: Survey Map

CAU Use Restriction Information

CAU Number/Description: CAU 417 (Central Nevada Test Area Surface, NV)

Applicable CAS Numbers/Descriptions: CAS No. 58-10-05 / UC-4 Area X

Contact (organization/project): NNSA/NV Off-Sites Project Manager

Surveyed Area (UTM coordinates, Zone 11, NDA 27):

UC4 AREA X

NE corner:	4281282.40 mN,	568284.01 mE
SE corner:	4281267.38 mN,	568270.71 mE
SW corner:	4281287.77 mN,	568213.42 mE
NW corner:	4281325.98 mN,	568246.26 mE

Survey Date 09/28/2000 **Survey Method (GPS, etc.)** Transit Survey **Datum** NAD 27

Site Monitoring Requirements: Visual inspections as specified in the Closure Report

Monitoring Frequency (quarterly, annually?): Inspections twice yearly to commence six months after the closure concurrence date.

Use Restrictions

The future use of any land related to this Corrective Action Unit (CAU), as described by the above surveyed location, is restricted from any DOE, BLM or USFS activity that may alter or modify the containment control as approved by the state of Nevada and identified in the CAU Closure Report or other CAU documentation unless appropriate concurrence is obtained in advance.

Comments: See the Closure Report for additional information on the condition of the site(s) and any monitoring and/or inspection requirements.

Submitted By: Monica Sanchez **Date:** 7/03/01

Attachments: Survey Map

United States Department of the Interior

Bureau of Land Management
Tonopah Field Station
1553 S. Main Street
P.O. Box 911
Tonopah, Nevada 89049
(775)482-7800 Fax (775)482-7810

In Reply Refer to:
NV065-1640
65.01

MAY 21 2001

Runore C. Wycoff, Director
Environmental Restoration Div.
Department of Energy
Nevada Operations Office
P.O. Box 98518
Las Vegas, NV 89193-8518

RE: Environmental Restoration Activities for the U.S. Department of Energy's (DOE) Central Nevada Test Area, Hot Creek Valley, Nevada

Dear Mr. Runore:

The Bureau of Land Management, Tonopah Field Station, is in receipt of DOE's document "Corrective Action Plan for Corrective Action Unit 417: Central Nevada Test Area Surface, Nevada." The document, which describes your planned environmental restoration activities on DOE land withdrawals in Hot Creek Valley, was received on or about April 16, 2000.

We look forward to receiving a copy of the completed Closure Report, which we understand will document the completed restoration activities at the DOE sites and offer information on land use restrictions on the withdrawn lands. Once the Closure Plan has been approved, we will incorporate the document into the official land withdrawal file.

If you have any questions, please contact Bill Fisher at (775) 482-7830.

Sincerely,

W. Craig MacKinnon

W. Craig MacKinnon
Assistant Field Manager, Tonopah

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APPENDIX G

SAMPLING, INSPECTION, TESTING, AND ACCEPTANCE (SITA) APPROVAL MATRIX/CHECKLIST

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SECTION II
SITA Plan Table I
Site: UC-1 Central Mud Pit -- Preclosure Tasks

REVISION : 0
DATE: 04-05-00

General instructions for using the SITA Plan Tables:

1. Acceptance and/or approval of tasks will be made by one (or more) of the SITA delegates (see Section I, Part 2.2 and Part 5.0 for guidance)
2. All task HPs shall be initialed by the responsible SITA delegate prior to continuance to the next phase of construction.

Construction Phase	SITA Task	SITA Method(s)	Sample/Test Quantity/Frequency	Sample/Location/ Requirement		Task Acceptance		Task Check Point (CP)
			Other Instructions	Stockpile/ Source	Per Lift Typical	Yes (or) No	Initials and Date	Task Hold Point (HP)
General Information	GENERAL INSPECTIONS/OBSERVATIONS -- See Specification Section 01050							
	General project support	Visual, plus basic measurements, include survey/material data where applicable	100% during construction	yes	yes	yes	KBC 9/26/00	
	Lift/layer thickness	Grade check lift/layer thickness, as required	As required per lift/layer (see check points)	N/A	yes	yes	KBC 9/11/00	
	As-built topographic survey	Survey check: thickness, elevations, slopes, as required	As required per construction phase (see hold points)	N/A	yes	yes	KBC 9/26/00	
1	WEST DIVERSION CHANNEL EXCAVATION -- See Specification Section 02222 and Drawing No. C34							
	As-built topographic survey	Survey check: elevations, slopes, as required	After excavation completion	N/A	N/A	yes	KBC 9/26/00	CP
2	NORTH DIVERSION CHANNEL EXCAVATION -- See Specicfic Section 02222 and Drawing No. C35							
	As-built topographic survey	Survey check: elevations, slopes, as required	After excavation completion	N/A	N/A	yes	KBC 9/26/00	HP
3	TRENCH EXCAVATION -- See Specification Section 02222 and Drawing No. C29							

Construction Phase	SITA Task	SITA Method(s)	Sample/Test Quantity/Frequency	Sample/Location/ Requirement		Task Acceptance		Task Check Point (CP)	
			Other Instructions	Stockpile/ Source	Per Lift Typical	Yes (or) No	Initials and Date	Task Hold Point (HP)	
	As-built topographic survey	Survey check: elevations, slopes, as required	After excavation completion	N/A	N/A	yes	KBC 8/1/00	HP Just BN 8/2/00	Engineering
4	**IMPACTED MUD MATERIAL PLACEMENT (from Corrective Action Sites [CASs]) See Drawing C29**								
	Placement only	Visual verification of mud placement in relocation trench completion	None	N/A	N/A	yes	KBC 8/23/00	CP	verbal from J. Sorola
	As-built grade check	Grade check: thickness/elevations, as required	After mud placement completion	N/A	N/A	yes	KBC 8/23/00	HP	Elevations recorded by grade checks and OE foreman on HHG III drawings
5	**WEST BERM SOIL REMOVAL (Between Relocation Trench and CMP) -- See Specification Section 02222 and Drawing No. C29**								
	As-built grade check	Grade check: elevations, slopes, as required	After excavation completion	N/A	N/A	yes	KBC 7/26/00	Released by J. Sorola HP	
6	**AGITATOR TOWER REMOVAL EIGHT LOCATIONS -- See Drawing No. C28**								
	Tower removal	Removal of the pipe towers, as specified on the drawings	None	N/A	N/A	yes	KBC 7/26/00	CP	
	Removal verified (8 locations)	Visual verification of completion and survey record location data as required	Photographs recommended	N/A	N/A	yes	KBC 7/26/00	CP	
	Disposal	Towers placed in holding area for disposal	As directed by the Construction Superintendent	N/A	N/A	yes	KBC 7/26/00	CP	
7	**CMP EXISTING BERMS BENCHING -- See Specification Section 02222 and Drawing Nos. C30 and C31**								
	As-built grade check	Grade check: elevations, slopes, as required	After benching and grade sloping completion	N/A	N/A	yes	KBC 8/2/00	Released by J. Sorola HP	

SECTION II

REVISION: 0
DATE: 04-05-00

SITA Plan Table II
Site: UC-1 Central Mud Pit -- Closure Tasks

General instructions for using the SITA Plan Tables:

1. Acceptance and/or approval of tasks will be made by one (or more) of the SITA delegates (see Section I, Part 2.2 and Part 5.0 for guidance)
2. All task HPs shall be initialed by the responsible SITA delegate prior to continuance to the next phase of construction.

Construction Phase	SITA Task	SITA Method(s)	Sample/Test Quantity/Frequency	Sample/Location/ Requirement		Task Acceptance		Task Check Point (CP)
			Other Instructions	Stockpile/ Source	Per Lift Typical	Yes (or) No	Initials and Date	Task Hold Point (HP)
General Information	GENERAL INSPECTIONS/OBSERVATIONS -- See Specification Section 01050							
	General project support	Visual, plus basic measurements, include survey/material data where applicable	100% during construction	yes	yes	yes	KBC 9/28/00	
	Lift/layer thickness	Grade check lift/layer thickness, as required	As required per lift/layer (see check points)	N/A	yes	yes	KBC 9/26/00	
	As-built topographic survey	Survey check: thickness, elevation, slope, as required	As required per construction phase completion (see hold points)	N/A	yes	yes	KBC 9/26/00	
1	GEOGRID LAYER PLACEMENT -- See Specification Section 07537 and Drawings C30 and C31							
	Preplacement notification	Contact DOE/PM and NDEP at least 48 hours prior to geogrid placement	None	N/A	N/A	yes	KBC 7/20/00 7/24/00	Released by J. Sorola 7/20/00 HP
	Placement only	Visual verification of completion	None	N/A	N/A	yes	KBC 7/28/00	HP 7/24/00
2	STABILIZATION LAYER PLACEMENT (Contaminated Material from CASs)							

Construction Phase	SITA Task	SITA Method(s)	Sample/Test Quantity/Frequency Other Instructions	Sample/Location/ Requirement Stockpile/ Source	 Per Lift Typical	Task Acceptance Yes (or) No	 Initials and Date	Task Check Point (CP) Task Hold Point (HP)
	Placement only	Visual verification of completion	None	N/A	N/A	yes	KBC 8/7/00	CP
	As-built grade check	Grade check: thickness, elevations, as required	After contaminated material layer placement completion	N/A	N/A	yes	KBC 8/7/00	CP
3	**STABILIZATION LAYER PLACEMENT (Native Material) -- See Specification Section 02223 and Drawings C32 and C33**							
First	2-ft layer placement	Compaction process: minimum four passes with LGP equipment	None	N/A	yes	yes	KBC 8/8/00	CP
Second	2-ft layer placement	Compaction process: minimum four passes with LGP equipment	None	N/A	yes	yes	KBC 8/17/00	CP
	Grade check	Grade check: thickness, elevations, slopes, as required	After each layer/lift placement completion	N/A	yes	yes	KBC 8/17/00	CP
	As-built topographic survey	Survey check: thickness, elevations, slopes, as required	After native material layer placement completion	N/A	yes	yes	KBC 9/26/00	HP
4	**MONUMENTS, FENCING, & SIGNAGE PLACEMENT -- See Specification Sections 02831& 03001 and Drawings C32 and C36**							
	Monuments	Installation/survey data	Completion	N/A	N/A	yes	KBC 9/20/00	CP
	Fencing	Installation	Completion	N/A	N/A	yes	KBC 9/15/00	CP
	Signage	Installation	Completion	N/A	N/A	yes	KBC 9/15/00	CP
	Survey	Cap surface - final topographic survey -- as-built drawings	Final	N/A	N/A	yes	KBC 9/25/00	HP
5	**VEGETATIVE LAYER PROCEDURE (Placed Stabilization Layer Material)**					yes yes yes	KBC ripped 9/15/00 KBC spreadet 9/20/00 KBC transplanted 4/10/01	
	Prepare cover only	Site prep: prior to placement of any vegetation disc/plow cover surface - avoiding the subsidance monuments	None	N/A	N/A			HP
6	**UC-1 CMP CLOSURE CAP CONSTRUCTION COMPLETION**							
	Site tour	Establish with DOE/PM (and notify	None	N/A	N/A	yes	KBC 4/10/01	HP

Construction Phase	SITA Task	SITA Method(s)	Sample/Test Quantity/Frequency	Sample/Location/ Requirement		Task Acceptance		Task Check Point (CP)
			Other Instructions	Stockpile/ Source	Per Lift Typical	Yes (or) No	Initials and Date	Task Hold Point (HP)
	confirmation	NDEP) closure acceptance tour date/time				yes	KBC 4/10/01	
	Site tour	Closure acceptance/Sign-off	Final	N/A	N/A	yes	4/10/01 KBC	HP

SECTION II

REVISION: 0
DATE: 04-05-00

SITA Plan Table III
Site: UC-1 Trench -- Closure Tasks

General instructions for using the SITA Plan Tables:

1. Acceptance and/or approval of tasks will be made by one (or more) of the SITA delegates (see Section I, Part 2.2 and Part 5.0 for guidance)
2. All task HPs shall be initialed by the responsible SITA delegate prior to continuance to the next phase of construction.

Construction Phase	SITA Task	SITA Method(s)	Sample/Test Quantity/Frequency	Sample/Location/ Requirement		Task Acceptance		Task Check Point (CP)
			Other Instructions	Stockpile/ Source	Per Lift Typical	Yes (or) No	Initials and Date	Task Hold Point (HP)
General Information	GENERAL INSPECTIONS/OBSERVATIONS -- See Specification Section 01050							
	General project support	Visual, plus basic measurements, include survey/material data where applicable	100% during construction	yes	yes	yes	KBC 9/26/00	
	Lift/layer thickness	Grade check lift/layer thickness, as required	As required per lift/layer (see check points)	N/A	yes	yes	KBC 9/26/00	
	As-built topographic survey	Survey check: thickness, elevation, slope, as required	As required per construction phase completion (see hold points)	N/A	yes	yes	KBC 8/1/00	As-built @ empty trench
1	GEOGRID LAYER PLACEMENT -- See Specification Section 07537 and Drawings C30 and C31							
	Preplacement notification	Contact DOE/PM and NDEP at least 48 hours prior to geogrid placement	None	N/A	N/A	yes	KBC 8/22/00	HP
	Placement only	Visual verification of completion	None	N/A	N/A	yes	8/24/00 KBC	HP
2	STABILIZATION LAYER PLACEMENT (Contaminated Material from CASs							

Construction Phase	SITA Task	SITA Method(s)	Sample/Test Quantity/Frequency	Sample/Location/ Requirement		Task Acceptance		Task Check Point (CP)	
			Other Instructions	Stockpile/ Source	Per Lift Typical	Yes (or) No	Initials and Date	Task Hold Point (HP)	
	Placement only	Visual verification of completion	None	N/A	N/A	yes	KBC 8/25/00	CP	
	As-built grade check	Grade check: thickness, elevations, as required	After contaminated material layer placement completion	N/A	N/A	yes	KBC 8/25/00	CP	
3	**STABILIZATION LAYER PLACEMENT (Native Material) -- See Specification Section 02223 and Drawings C32 and C33**								
First	2-ft layer placement	Compaction process: minimun four passes with LGP equipment	None	N/A	yes	yes	KBC 8/27/00	CP	
Second	2-ft layer placement	Compaction process: minimun four passes with LGP equipment	None	N/A	yes	yes	KBC 9/11/00	CP	
	Grade check	Grade check: thickness, elevations, slopes, as required	After each layer/lift placement completion	N/A	yes	yes	KBC 8/27/00 9/11/00	During CP	placement of 6 lifts, by grade checker
	As-built topographic survey	Survey check: thickness, elevations, slopes, as required	After native material layer placement completion	N/A	yes	yes	KBC 9/26/00	HP	
4	**MONUMENTS, FENCING, & SIGNAGE PLACEMENT -- See Specification Sections 02831 & 03001 and Drawings C32 and C36**								
	Monuments	Installation/survey data	Completion	N/A	N/A	yes	KBC 9/20/00	CP	
	Fencing	Installation	Completion	N/A	N/A	yes	KBC 9/15/00	CP	
	Signage	Installation	Completion	N/A	N/A	yes	KBC 9/15/00	CP	
	Survey	Cap surface - final topographic survey -- as-built drawings	Final	N/A	N/A	yes	KBC 9/26/00	HP	
5	**VEGETATIVE LAYER PROCEDURE (Placed Stabilization Layer Material)**								
	Prepare cover only	Site prep: prior to placement of any vegetation disc/plow cover surface - avoiding the subsidance monuments	None	N/A	N/A	yes	KBC- mulched 9/15/00 KBC- seeded 9/20/00 KBC transplanted 4/10/01	HP	
6	**UC-1 TRENCH CLOSURE CAP CONSTRUCTION COMPLETION**								
	Site tour	Establish with DOE/PM (and notify	None	N/A	N/A	yes	KBC 4/10/01	HP	

Construction Phase	SITA Task	SITA Method(s)	Sample/Test Quantity/Frequency	Sample/Location/ Requirement		Task Acceptance		Task Check Point (CP)
			Other Instructions	Stockpile/ Source	Per Lift Typical	Yes (or) No	Initials and Date	Task Hold Point (HP)
	confirmation	NDEP) closure acceptance tour date/time				yes	KBC 4/10/01	
	Site tour	Closure acceptance/Sign-off	Final	N/A	N/A	yes	4/11/01 KBC	HP

APPENDIX H

POST-CLOSURE INSPECTION CHECKLISTS

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CAU 417: CNTA UC-1 CENTRAL MUD PIT COVER, POST-CLOSURE MONITORING CHECKLIST

Date of Last Inspection:	Reason for Last Inspection:
Responsible Agency:	Project Manager:
Inspection Date:	
Inspector (name, title, organization):	
Assistant Inspector (name, title, organization):	

A. GENERAL INSTRUCTIONS

1. All checklist items must be completed and detailed comments made to document the results of the site inspection. The completed checklist is part of the field record of the inspection. Additional pages should be used as necessary to ensure that a complete record is made. Attach the additional pages and number all pages upon completion of the inspection.
3. Any checklist line item marked by an inspector in a SHADED BOX, must be fully explained or an appropriate reference to previous reports provided. The purpose of this requirement is to provide a written explanation of inspector observations and the inspector's rationale for conclusions and recommendations. Explanations are to be placed on additional attachments and cross-referenced appropriately. Explanations, in addition to narrative, will take the form of sketches, measurements, annotated site maps.
4. The site inspection is a walking inspection of the entire site including the perimeter and sufficient transects to be able to inspect the entire surface and all features specifically described in this checklist.
5. A standard set of color 35 mm photographs (or equivalent) is required. In addition, all anomalous features or new features (such as changes in adjacent area land use) are to be photographed. A photo log entry will be made for each photograph taken.
6. This unit will be inspected biannually with formal reporting to the Nevada Division of Environmental Protection to be done annually. The annual report will include an executive summary, this inspection checklist with field notes and photo log attached, and recommendations and conclusions.

B. PREPARATION (To be completed prior to site visit)	YES	NO	EXPLANATION
1. Site as-built plans and site base map reviewed.			
2. Previous inspection reports reviewed.			
a. Were anomalies or trends detected on previous inspections?			
b. Was maintenance performed?			
3. Site maintenance and repair records reviewed.			
a. Has site repair resulted in a change from as-built conditions?			
b. Are revised as-builts available that reflect repair changes?			

C. SITE INSPECTION (To be completed during inspection)	YES	NO	EXPLANATION
1. Adjacent off-site features within watershed areas.			
a. Have there been any changes in use of adjacent area?			
b. Are there any new roads or trails?			
c. Has there been a change in the position of nearby washes?			
d. Has there been lateral excursion or erosion/deposition of nearby washes?			
e. Are there new drainage channels?			
f. Change in surrounding vegetation?			
2. Security fence, signs.			
a. Displacement of fences, site markers, boundary markers, or monuments?			
b. Have any signs been damaged or removed? (Number of signs replaced: _____)			
c. Were gates locked?			

CAU 417: CNTA UC-1 CENTRAL MUD PIT COVER, POST-CLOSURE MONITORING CHECKLIST

	YES	NO	EXPLANATION
3. Waste Unit cover.			
a. Is there evidence of settling?			
b. Is there cracking?			
c. Is there evidence of erosion around the cap (wind or water)?			
d. Is there evidence of animal burrowing?			
e. Have the site markers been disturbed by man or natural processes?			
f. Do natural processes threaten to integrity of any cover or site marker?			
g. Other?			
4. Vegetative cover.			
a. Is perimeter fence or mesh fencing damaged?			
b. Is there evidence of horses or rabbits on site?			
c. Is organic mulch and/or plants adequate to prevent erosion?			
d. Are weedy annual plants present? If yes, are they a problem?			
e. Are seeded plant species found on site?			
f. Is there evidence of plant mortality?			
5. Photo Documentation			
a. Has a photo log been prepared?			
c. Number of photos exposed ( )			

D. FIELD CONCLUSIONS

1. Is there an imminent hazard to the integrity of the unit? (Immediate report required)			
Person/Agency to whom report made:			
2. Are more frequent inspections required?			
3. Are existing maintenance/repair actions satisfactory?			
4. Is other maintenance/repair necessary?			
5. Is current status/condition of vegetative cover satisfactory?			

6. Rationale for field conclusions:

E. CERTIFICATION

I have conducted an inspection of the UC-1 Cental Mud Pit Cover, CAU 417, at the Central Nevada Test Area in accordance with the Post-Closure Monitoring Plan (see Closure Report) as recorded on this checklist, attached sheets, field notes, photo logs, and photographs.

Chief Inspector's Signature:	Printed Name:
Title:	Date:

CAU 417: CNTA UC-4 MUD PIT C COVER, POST-CLOSURE INSPECTION CHECKLIST

Date of Last Inspection:	Reason for Last Inspection:
Responsible Agency:	Project Manager:
Inspection Date:	
Inspector (name, title, organization):	
Assistant Inspector (name, title, organization):	

A. GENERAL INSTRUCTIONS

1. All checklist items must be completed and detailed comments made to document the results of the site inspection. The completed checklist is part of the field record of the inspection. Additional pages should be used as necessary to ensure that a complete record is made. Attach the additional pages and number all pages upon completion of the inspection.
3. Any checklist line item marked by an inspector in a SHADED BOX, must be fully explained or an appropriate reference to previous reports provided. The purpose of this requirement is to provide a written explanation of inspector observations and the inspector's rationale for conclusions and recommendations. Explanations are to be placed on additional attachments and cross-referenced appropriately. Explanations, in addition to narrative, will take the form of sketches, measurements, annotated site maps.
4. The site inspection is a walking inspection of the entire site including the perimeter and sufficient transects to be able to inspect the entire surface and all features specifically described in this checklist.
5. A standard set of color 35 mm photographs (or equivalent) is required. In addition, all anomalous features or new features (such as changes in adjacent area land use) are to be photographed. A photo log entry will be made for each photograph taken.
6. This unit will be inspected biannually with formal reporting to the Nevada Division of Environmental Protection to be done annually. The annual report will include an executive summary, this inspection checklist with field notes and photo log attached, and recommendations and conclusions.

B. PREPARATION (To be completed prior to site visit)	YES	NO	EXPLANATION
1. Site as-built plans and site base map reviewed.			
2. Previous inspection reports reviewed.			
a. Were anomalies or trends detected on previous inspections?			
b. Was maintenance performed?			
3. Site maintenance and repair records reviewed.			
a. Has site repair resulted in a change from as-built conditions?			
b. Are revised as-builts available that reflect repair changes?			

C. SITE INSPECTION (To be completed during inspection)	YES	NO	EXPLANATION
1. Adjacent off-site features within watershed areas.			
a. Have there been any changes in use of adjacent area?			
b. Are there any new roads or trails?			
c. Has there been a change in the position of nearby washes?			
d. Has there been lateral excursion or erosion/deposition of nearby washes?			
e. Are there new drainage channels?			
f. Change in surrounding vegetation?			
2. Security fence, signs.			
a. Displacement of fences, site markers, boundary markers, or monuments?			
b. Have any signs been damaged or removed? (Number of signs replaced: _____)			
c. Were gates locked?			

CAU 417: CNTA UC-4 MUD PIT C COVER, POST-CLOSURE INSPECTION CHECKLIST

3. Waste Unit cover.	YES	NO	EXPLANATION
a. Is there evidence of settling?			
b. Is there cracking?			
c. Is there evidence of erosion around the cap (wind or water)?			
d. Is there evidence of animal burrowing?			
e. Have the site markers been disturbed by man or natural processes?			
f. Is the vegetation on the cover?			
g. Do natural processes threaten to integrity of any cover or site marker?			
h. Other?			
4. Photo Documentation			
a. Has a photo log been prepared?			
c. Number of photos exposed ( )			

D. FIELD CONCLUSIONS			
1. Is there an imminent hazard to the integrity of the unit? (Immediate report required)			
Person/Agency to whom report made:			
2. Are more frequent inspections required?			
3. Are existing maintenance/repair actions satisfactory?			
4. Is other maintenance/repair necessary?			
5. Is current status/condition of vegetative cover satisfactory?			
6. Rationale for field conclusions:			

E. CERTIFICATION

I have conducted an inspection of the UC-4 Mud Pit C Cover, CAU 417, at the Central Nevada Test Area in accordance with the Post-Closure Inspection Plan (see Closure Report) as recorded on this checklist, attached sheets, field notes, photo logs, and photographs.

Chief Inspector's Signature:	Printed Name:
Title:	Date:

APPENDIX I

NDEP DOCUMENT REVIEW SHEET

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DOCUMENT REVIEW SHEET

Document Title/Number: Closure Report for Corrective Action Unit 417: Central Nevada Test Area Surface, Nevada
Document Date: July 2001
Revision Number: 0
Originator/Organization: Bechtel Nevada
Reviewer/Organization: Nevada Division of Environmental Protection

Comment Number/ Location	Type[a]	Comment	Comment Response	Accept
1. Section 5.0 page 49.	M	The closure report was found to be deficient in that it does not explicitly state in Chapter 5.0 Post Closure Monitoring Plan that in the event that the UC-1 CMP cover was not performing as designed, or if the vegetative cover was not healthy and capable of performing the function of transpiring soil cover moisture as designed, that the NNSA/NV would take steps to repair, re-vegetate, or otherwise restore the soil cover or vegetation so that it meets design criteria.	Section 5.0 has been modified to state that specific compliance criteria for the UC-1 cover performance will be established once the soil moisture in the cover has reached equilibrium. Once equilibrium has been reached, if the cover is found to be not in compliance, a work plan detailing the proposed corrective actions will be prepared and submitted to the NDEP for approval prior to making corrective actions.	YES

a. Comment Types: M=Mandatory S=Suggested

DOCUMENT REVIEW SHEET

Comment Number/ Location	Type[a]	Comment	Comment Response	Accept
2. Seciton 5.0 page 49	M	The Post Closure Monitoring Plan does state that if inspection results indicate that maintenance or repair of the cover or other site installations is required, that those repairs will be made and NDEP informed. However, no criteria are provided on which maintenance and repair decisions are to be based. What is required is a set of quantified criteria that will be used to make these decisions (e.g. subsidence distance or percentage over designed cover subsidence, depth or number of erosion rills in cover, diversion channel scour depth or distance of deviation from original channel).	See response to comment 1 above. If the UC-1 cover is not in compliance and/or if other site repairs are required the NNSA/NV will inform the NDEP and, if necessary, a work plan detailing the proposed corrective actions will be prepared and submitted to the NDEP for approval prior to making corrective actions.	YES

a. Comment Types: M=Mandatory S=Suggested

DOCUMENT REVIEW SHEET

Comment Number/ Location	Type[a]	Comment	Comment Response	Accept
3. Section 4.2 page 47 and Appendix F	M	Land-use restrictions are stipulated in Section 4.2 and exact coordinates are given in Appendix F. The U.S. Bureau of Land Management (BLM) has been informed of the impending closure (letter in Appendix F), but has not formally documented the land-use restrictions in its records. Final closure of CAU 417 and movement of CAU 417 from Appendix III to Appendix IV of the FFACO "Closed Corrective Action Units" will not occur until final recordation is made by BLM , in terms of appropriately incorporating the land use restrictions into the Land Withdrawal Record, and evidence of that action is received by NDEP.	This issue will be addressed in accordance with the procedure agreed to by the NDEP and the DOE.	YES

a. Comment Types: M=Mandatory S=Suggested

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